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***Naval Information
Warfare Center***



PACIFIC

**In collaboration with the
Intelligence Advanced Research Projects Activity**



**Broad Agency Announcement (BAA)
Effective Quantitative Antenna Limits for Performance (EQuAL-P) Program**

N66001-22-S-0031

Release Date: 03 December 2021

PART I: OVERVIEW INFORMATION

This notice constitutes a Broad Agency Announcement (BAA) and sets forth research of interest in the area described in detail below. The solicitation process will follow Federal Acquisition Regulation (FAR) Part 35, Research and Development Contracting, as supplemented with additional information included in this notice. Awards based on responses to this BAA will be considered the result of full and open competition.

- **Federal Agency Name:** Naval Information Warfare Center, Pacific (NIWC Pacific) on behalf of the Office of the Director of National Intelligence/Intelligence Advanced Research Projects Activity (IARPA)
- **Funding Opportunity Title:** Effective Quantitative Antenna Limits for Performance (EQuAL-P) Program
- **Announcement Type:** Initial Announcement
- **Funding Opportunity Number:** N66001-22-S-0031
- **Catalog of Federal Domestic Assistance (CFDA) Number:** Not applicable
- **Dates:**
 - Posting Date: 03 December 2021
 - Proposal Due Date for Initial Round of Selections: 04 February 2022
 - Closing Date: 04 March 2022

Proposals are due by 4:00PM Pacific Time Zone on the proposal due date and closing date.

- **Concise description of funding opportunity:** NIWC Pacific is soliciting proposals in accordance with Federal Acquisition Regulation (FAR) 6.102(d) (2), FAR 35.016 on behalf of IARPA. This notice constitutes a Broad Agency Announcement (BAA) and sets forth research of interest in the area of non-linear, time-invariant (non-LTI) electrically small antennas (ESAs). The solicitation process will follow Federal Acquisition Regulation (FAR) Part 35, Research and Development Contracting, as supplemented with additional information included in this notice. Awards based on responses to this BAA will be considered the result of full and open competition.
- **Anticipated individual awards:** Multiple awards are anticipated; the Government reserves the right to select for award all, some, one, or none of the proposals received in response to this announcement.
- **Types of instruments that may be awarded:** Procurement contracts¹
- **Amendments:** Any amendments to this BAA will be posted via NAVWAR e-Commerce Central at <https://e-commerce.sscno.nmci.navy.mil> (Note that this does not include a "www" prefix).
- **Agency Contacts:**

(Note: Please submit all questions regarding this BAA through <https://e-commerce.sscno.nmci.navy.mil>)

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¹ **Procurement Contract:** This is a standard government contract that follows the processes, format and terms and conditions as outlined in the Federal Acquisition Regulations (FAR) and supplementing Agency specific regulations.

1. FUNDING OPPORTUNITY DESCRIPTION:

The Government often selects research efforts through the BAA process. The use of a BAA solicitation allows a wide range of innovative ideas and concepts. The BAA will appear on NAVWAR e-Commerce Central at <https://e-commerce.sscno.nmci.navy.mil>; the System for Award Management Contract Opportunities at <https://sam.gov/>, as well as the IARPA website at <http://www.iarpa.gov/>. The following information is for those wishing to respond to this Program BAA.

This BAA is for the Effective Quantitative Antenna Limits for Performance (EQuAL-P) program. The Government is seeking innovative solutions for the EQuAL-P program in this BAA. EQuAL-P is envisioned to be a 45-month effort, beginning approximately July 15, 2022, through April 15, 2026. All responses to this BAA should be submitted through e-Commerce Central at <https://e-commerce.sscno.nmci.navy.mil>.

1.A. Program Overview

The Intelligence Community (IC) and the Department of Defense (DoD) missions often require the use of electrically small antennas (ESAs) where the size of the antenna is significantly smaller than the wavelength of operation, fundamentally limiting the antenna performance. The EQuAL-P program aims to realize significant gains in the performance of ESAs by employing active and/or time varying solutions.

Of particular relevance to the IC and DoD, is the product of antenna bandwidth (β) and radiation efficiency (η) for many operations involving radio frequency (RF) transmission and reception. This BAA uses the definition of electrical smallness given by $ka < \frac{1}{2}$ where k is the operational wavenumber and a corresponds to the radius of the imaginary Chu sphere enclosing the antenna². In some transmit (Tx) and receive (Rx) applications, the electrical size of an antenna may limit its ability to operate at multiple carrier frequencies, to handle wideband signals (e.g., direct sequence spread spectrum) without distortion, and/or to support higher data rates as described by the well-known Shannon limit for channel capacity³. It is well known that antenna bandwidth may be increased at the expense of radiation efficiency, but this tradeoff is often problematic for many operations. In the case of some transmit operations, the overall system efficiency may be critical due to limited available power or energy or due to limitations for heat exchange meant to keep the system cool and linear. For both Rx and Tx, the need to optimize the signal to noise ratio (SNR) is also often critical especially in noisy environments. EQuAL-P seeks transmit solutions that are “plug-in” efficient with values of η effectively equal to 50% or higher, although lower levels might be acceptable especially for $ka \ll 1$. When operating in receive mode in an internally noise-limited environment, system sensitivity is often critically dependent on radiation efficiency. In general, many operations require ESAs to operate with $\beta\eta$ greater than the limit physics imposes on them. In particular for linear, time invariant (LTI) antennas

$$\beta\eta \leq \frac{1}{\sqrt{2}} \left(\frac{1}{ka} + \frac{1}{n(ka)^3} \right)^{-1} \quad (1)$$

where n is the number of independent radiating modes, limited to one or two⁴. The proportionality constants in this formula depend on what definition of impedance bandwidth is chosen, in this case with the voltage standing wave ratio (VSWR) set to two or less.

This limit appears to be immutable. *Therefore, it is anticipated that passive, time-invariant solutions will not be successful in accomplishing the aims of the program.* However, if the use cases for improving $\beta\eta$ are considered, it may be possible to realize significant gains in an effective bandwidth-radiation efficiency product by employing active and/or time varying solutions, thereby circumventing the assumptions the fundamental performance limits are based upon. Solutions will likely depend on the frequency of operation. EQuAL-P contemplates operation in the high frequency (HF), very high frequency (VHF), and ultrahigh frequency (UHF) bands.

² L. Chu, “Physical limitations of omni-directional antennas,” J. Appl. Phys. **69** (2) 1163-1175 (1948)

³ C. Shannon, “A Mathematical Theory of Communication”, Bell Syst. Techn. J. **27** 379-423, 623-656 (1948)

⁴ D. Sievenpiper, et al., “Experimental Validation of Performance Limits and Design Guidelines for Small Antennas,” IEEE Trans. Antennas Propag. **60** (1) 8-19 (2012)

Beyond the size of the antenna itself, some techniques for enhancing $\beta\eta$ may rely on additional hardware potentially increasing the overall system size, power demands, and system infrastructure. Examples of this might be employing a cryogenically cooled field-sensing element or switching systems requiring a full rack of supportive circuitry. While such techniques may very well have merit for certain applications, the aim of the EQuAL-P program is to develop techniques that minimally add to the overall system size, power draw, and hardware required for use; Offerors should comment on these factors in their proposals.

Additionally, EQuAL-P aims to deliver solutions that are “benchtop compatible” in the sense that they can be implemented on a technician’s lab bench mostly with standard tools (e.g., soldering irons, printed circuit board milling and etching, additive manufacturing). Specialized techniques are acceptable, but Offerors should stipulate any nonstandard equipment required as a potential barrier toward implementing rapid fabrication, customization, and integration. Beyond electrical size (defined by $ka < 1/2$), EQuAL-P prefers antenna sizes restricted to $a < 1.0$ meter, recognizing that some HF applications afford additional space with a as large as 5 meters. In many operations, ground planes of various electrical size are often incidentally present, form part of the radiating structure, and strictly speaking, enlarge the antenna beyond the resonant element⁵. In recognition of this tendency, EQuAL-P expresses a preference for techniques that are consistent with radiating elements over or close to ground planes. Additionally, many operations do not afford space for antennas with spherical geometries or aspect ratios close to one. In recognition of both tendencies, EQuAL-P expresses the preference for techniques that are consistent with low-profile radiating elements and recognizes that the $\beta\eta$ limit for such geometries must be calculated appropriately for ground plane size and occupied volume. These geometrical limits are sometimes referred to as the Gustafsson limit⁶ and are typically significantly lower than the Chu limit.

EQuAL-P recognizes that some offered techniques may be applicable to a single modulation scheme or to a small set of modulation types. While such narrowly applicable techniques are of interest, techniques that can be applied with high fidelity to a broad set of modulation schemes or at least to very common ones are preferred (e.g., phase-shift keying, quadrature amplitude modulation, orthogonal frequency division multiplexing). The ability to reconfigure the modulation in real-time operation just like a “normal” antenna would react to whatever modulation is presented at its input would be acceptable. Offerors should address these issues in their proposal.

EQuAL-P seeks systems that allow both transmit and receive capabilities but will consider proposals that offer just one of these capabilities.

Finally, solutions must be reasonably durable against environmental and operational variations. Offerors should address issues of performance stability due to changes in the environment and the ability to work over a wide range of transmit power and background noise.

While non-Foster matching⁷ is a well-known technique for increasing effective antenna bandwidth, approaches based strictly on that principle will not be considered in this BAA.

1.A.1. Technical Challenges

Proposals must fully describe the Offeror’s technical approaches to addressing some or all of the following Technical Challenges (TCs). All proposals must address TC-1 and at least one other TC. If prototypes will not be developed for all of the listed target center frequencies, any challenges or barriers to translating the prototype design to another frequency within the HF, VHF, or UHF bands should be described.

⁵ N. Bohannon, J. Bernhard, “Design Guidelines Using Characteristic Mode Theory for Improving the Bandwidth of PIFAs,” *IEEE Trans. Antennas Propag.* **63** (2) 459-465 (2015)

⁶ M. Gustafsson, et al., “Physical limitations on antennas of arbitrary shape,” *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences* **463** (2086), 2589-2607 (2007)

⁷ S. E. Sussman-Fort, R. M. Rudish, “Non-Foster Impedance Matching of Electrically-Small Antennas,” *IEEE Trans. Antennas and Propag.* **57** (8), 2230-2241 (2009)

1. TC-1 – effective limits of proposed techniques

The EQuAL-P objective for TC-1 is to project or establish the limits of the technique(s) being proposed to the effective bandwidth-efficiency product and to characterize other limitations of the technique (e.g., linearity with power, stability, emission of harmonics).

2. TC-2 – operational prototype for transmit

The EQuAL-P objective for TC-2 is to demonstrate an operational prototype able to transmit with an effective bandwidth-efficiency product superior to what is achievable with a traditional ESA (to be determined by the government) by at least 10 dB. For transmit, target center frequencies should be either 10 MHz, 100 MHz, 300 MHz, and/or 1 GHz.

3. TC-3 – operational prototype for receive

The EQuAL-P objective for TC-3 is to demonstrate an operational prototype able to receive with an effective bandwidth-efficiency product superior to what is achievable with a traditional ESA (to be determined by the government) by at least 10 dB. For VHF and UHF receive, target center frequencies should be 100 MHz, 300 MHz, and/or 1 GHz. The entire HF frequency band (3-30 MHz) should be covered by HF receive non-LTI prototype systems.

4. TC-4 – operational prototype for dual transmit/receive

The EQuAL-P objective for TC-4 is to demonstrate an operational prototype (a structure that is switched between a transmitter and receiver) able to transmit and receive with an effective bandwidth-efficiency product superior to what is achievable with a traditional ESA (to be determined by the government) by at least 10 dB. Target center frequencies should be 10 MHz, 100 MHz, 300 MHz, and/or 1 GHz.

1.A.2. Program Phases

The EQuAL-P program will proceed in three phases. The phases are designed to give Performers time to explore potentially more speculative solutions early on while requiring operational prototypes in Phases II and III. More detail can be found in SECTION 1. F. Program Metrics. The following paragraphs introduce the phases.

Phase I – Extensibility: Phase I will last 18 months and will focus on the viability of the Performer’s proposed approach. Performers are required to provide compelling experimental, analytical, or modeling evidence that their approach will result in a working prototype capable of achieving 10 dB improvement in the effective bandwidth-efficiency product of an otherwise equivalent ESA. Exercise of the option to continue with the EQuAL-P program into Phase II will consider a thorough, independent evaluation of the Performer’s presented evidence.

Phase II – Initial Prototype: Phase II will last 15 months and will focus on the development of a functional prototype capable of achieving 6 dB improvement in the effective bandwidth-efficiency product of an equivalent ESA. Exercise of the option to continue with the EQuAL-P program into Phase III will consider independent measurements to validate non-LTI antenna performance.

Phase III – Final Prototype: Phase III will last 12 months and will focus on the development of a functional prototype capable of achieving 10 dB improvement in the effective bandwidth-efficiency product of an equivalent ESA.

1.B. Team Expertise

Collaborative efforts and teaming among Offerors are highly encouraged. It is anticipated that Offeror teams will be multidisciplinary and may include expertise and experience in multiple fields related to the EQuAL-P program goals.

1.C. Program Scope and Limitations

Proposals shall explicitly address all of the following:

- **Underlying theory:** Proposed strategies to meet program-specified metrics must have firm theoretical bases

that are described with sufficient detail that reviewers will be able to assess the viability of the approaches. Proposals shall properly reference previous work upon which their approach is founded.

- **Development approach:** Proposals shall describe the technical approach to meeting program metrics.
- **Technical risks:** Proposals shall identify technical risks and proposed mitigation strategies for each.
- **Team and Program Management and Internal Testing and Evaluation:** Proposals shall describe the approach to leveraging and managing the contributions of each member of the Offeror team and their internal approach to testing and evaluation (T&E) of the developed techniques independently from IARPA's T&E.

The following areas of research are out of scope for the EQuAL-P program:

- Research that does not have strong theoretical and experimental foundations.
- Research that does not have plausible scientific support for the proposed results.
- Development of conventional amplifier hardware. New or novel applications of amplifier hardware are acceptable.
- Research into software techniques that are generally applicable to signal reconstruction; software techniques that are specifically applicable to an Offeror's approach may be acceptable.
- Non-Foster approaches.
- Antenna designs that are not demonstrably electrically small ($ka < \frac{1}{2}$) over the entirety of the desired band of operation.

1.D. Theory

Achieving program metrics will require Performers to develop experimental, analytical, or modeling evidence that their approach will result in a working prototype capable of achieving 10 dB improvement in the effective bandwidth-efficiency product of an otherwise equivalent ESA. It is anticipated that Performers will have to advance the state-of-the-art theoretical understanding of time-varying antennas throughout the lifetime of the program and particularly so in Phase I.

1.E. Test and Evaluation (T&E)

IARPA research programs include rigorous, objective evaluations aimed at demonstrating achievement of carefully designed technical performance metrics. This section describes plans for the test and evaluation protocols to which Performer deliverables will be subjected. Performers will be informed as T&E plans are refined or otherwise revised as the program progresses.

1.E.1. Effective Performance Parameters

Measurement techniques for β and η of traditional LTI antennas has been very well established. However, when considering the performance of a non-LTI antenna design for practical operation, the comparison to an LTI antenna is not necessarily straightforward. This BAA sets forth a test framework to allow for the calculation of effective performance parameters as a basis for comparison. These parameters will depend on whether the antenna is working in transmit or receive mode. To validate T&E measurements of non-LTI antenna systems, IARPA plans to incorporate side-by-side measurements of LTI antenna systems of known bandwidth and efficiency for comparison.

It is anticipated that proposed non-LTI approaches will result in a larger effective system volume compared to the analogous LTI design. As a consequence, the effective ka of the system will be increased. The volume added may be in a different spatial location than the antenna itself. In such a case for a practical consideration, the circuit volume

and any hardware supporting the circuit would have to be accommodated in the platform where the antenna resides. One way to account for this would be to add the extra hardware volume to the antenna volume as a simple sum, but there may be advantages to approaches where the volumes are essentially separate or independent. Proposers should describe the physical volume the time-varying hardware will occupy compared to ka (or the relevant Gustafsson geometrical shape for non-spheres). To facilitate evaluation of the utility of the Offeror's technique, a comparable ESA with state-of-the art performance should be proposed.

1.E.2. Transmit

One approach for determining effective bandwidth (β_{eff}) is to consider the bandwidth of the waveform to be transmitted. If the resulting transmitted signal is transmitted with an error vector magnitude (EVM) equivalent to an SNR degradation of less than 1 dB for an equivalent bandwidth LTI system, the non-LTI antenna system has effectively achieved the bandwidth of the waveform. As the waveform bandwidth is increased, the received EVM presumably increases until the threshold is exceeded; this point determines the bandwidth of the non-LTI bandwidth antenna system. As previously stated, efficient operation in noisy environments is desirable.

Another approach for determining effective bandwidth (β_{eff}) is to consider the channel capacity of the communication system, which in principle would be limited by the ESA. This BAA recognizes that calculation of channel capacity depends on available SNR. Offerors should take this into account when describing the ultimate utility of their proposed technique. For example, it may be the case that the proposed technique only supports a particular modulation that indeed outperforms the ESA when transmitting that same waveform, but the ESA may be able to support a different, higher order modulation scheme than the non-LTI antennas with a higher channel capacity. Measurement of bit error rate (BER) may be necessary to validate performance in such cases. At least for transmit, it is assumed that optimal solutions will require highly efficient radiation and effective impedance match to the non-LTI antenna.

One approach for determining effective radiation efficiency (η_{eff}) is to consider the total power dissipated (P_{dis}) by the non-LTI system at typical FCC power transmission levels. In practical applications, any additional power consumed or dissipated by non-radiating elements will reduce the lifetime of an energy-constrained system and may limit the radiated power (P_{rad}) and thus the SNR as seen by a distant receiver for a power-limited system. Simply tallied, the power consumed by the non-LTI hardware is added to the power dissipated as heat in the radiating element when calculating efficiency:

$$\eta_{\text{eff}} = P_{\text{rad}} / (P_{\text{rad}} + P_{\text{dis}}) \quad (2)$$

It is noted that for non-LTI systems, η_{eff} may be a function of total power available. Proposers should describe the impact of their approach on the effective radiation efficiency.

Non-LTI antenna systems may result in unwanted radiation beyond what is intentionally radiated. This can be particularly problematic in receive systems. Offerors should address this issue and mitigation strategies.

1.E.3. Receive

Similar to transmit, a possible approach for determining effective bandwidth (β_{eff}) of a non-LTI receive system is to consider the bandwidth of the waveform to be received with an EVM equivalent to an SNR degradation of less than 1 dB for an equivalent bandwidth LTI system. This approach may find applicability when the center frequency, bandwidth, and modulation type of the waveform to be received are exactly known. In this case, β_{eff} can be defined as it was before for transmit.

Similarly, the channel capacity of the receive non-LTI antenna could be considered, and the considerations of transmission may still apply. Additionally, this BAA notes that the optimal solution may not be a 100% efficient, perfectly impedance matched ESA depending on the available SNR. This is particularly true for high SNR environments. Offerors should take this into account when describing their technique and assume that optimal operation in low SNR environments is preferred.

A more common receive application involves receiving waveforms of various modulation types over a frequency range typically much larger than the bandwidth of any one waveform. Ideally, all waveforms in a given operational bandwidth are demodulated. However, it is sometimes useful to simply detect all the narrowband signals that exist in a wide operational bandwidth. In this latter case, there is interest in evaluating signal characteristics such as frequency, instantaneous bandwidth, modulation type, etc. While algorithms and hardware for detection and classification are outside the scope of this BAA, the Offeror should consider if the receive antenna RF output can be easily digitized and used by such hardware for detection and classification. For LTI antennas, both bandwidth and radiation efficiency are reciprocal quantities (i.e., the same for transmit and receive) and are most relevant when considering resonant antennas. In this latter case, bandwidth corresponds to the frequency range over which waveforms can be detected and with what efficiency and sensitivity.

A receiver noise figure (or environmental noise level in the case of HF) will be used to compare across antennas, and an antenna should not appreciably increase the noise figure unless that increase in noise trades off for some other factor such as larger bandwidth or smaller size, weight, and power (SWaP). Presumably in both these cases, non-LTI circuitry will add to the power consumed by the antenna system. Similar to the transmit case, any additional power required by the receive system may reduce the lifetime of the system or exceed the available power, and in terms of the transduced or detected power (P_{det}) and dissipated power (P_{dis}), the effective efficiency may be expressed as

$$\eta_{\text{eff}} = P_{\text{det}} / (P_{\text{det}} + P_{\text{dis}}) \quad (3)$$

In the cases described above, large efficiencies translate to higher SNR if the system is internally noise limited. In such cases bandwidth typically translates to the frequency range over which signals can be received. When resonant antennas are simply too small to achieve useful bandwidth such as is typical at HF, non-resonant antennas are often employed. In this last case, common metrics are sensitivity, noise figure, and antenna noise temperature, but these may vary considerably with frequency over the operating band, and the radiation efficiencies of the non-LTI antennas are typically quite poor. With this in mind, Offerors should detail how their approach would outperform traditional systems where radiation efficiencies tend to be very low and/or external noise tends to be much greater than system noise. The overall power draw of the system should be described in comparison to traditional state-of-the-art approaches. Sensitivity as a function of frequency should be described as a proxy for bandwidth. Ultimately, Offerors should detail how their approach could detect waveforms of various modulation types over the desired frequency range given efficiency, sensitivity, and noise figure while optimizing SWaP.

1.F. Program Metrics

Achievement of metrics is a factor taken into account when determining whether to exercise options to continue performance under IARPA research contracts. IARPA has defined EQuAL-P program metrics to evaluate effectiveness of the proposed solutions in achieving the stated program goal and objectives, and to determine whether satisfactory progress is being made to warrant continued funding of the Performers. The metrics described in this BAA are shared with the intent to scope the effort, while affording maximum flexibility, creativity, and innovation to Offerors proposing solutions to the stated problem. Proposals with a plan to exceed the defined metrics in one or more frequency band are desirable. It is anticipated that specific T&E protocols including specific test equipment will be established at program Kick-off or shortly thereafter. Program metrics may be refined or further specified during the three phases of the EQuAL-P program; if metrics change, revised metrics will be communicated in a timely manner to Performers. In the previous section, the program metrics in terms of effective bandwidth and effective radiation efficiency have been described, but these might not be the best way to characterize these quantities. It is expected that test and evaluation procedures will be customized based on operating scenario of the Offeror's approach.

This BAA puts forth reasonable definitions of effective bandwidth and efficiency for transmit systems, but there may exist others that are appropriate for alternative approaches not contemplated by the BAA. It is acceptable for Offerors to propose alternative definitions, so long as such definitions are appropriately constructed, defensible, and described in their proposal. Such definitions will be evaluated in tandem with proposed techniques. In any case, EQuAL-P will rely on the expertise of government and/or trusted agents (e.g., Federally Funded Research Development Centers, University Affiliated Research Centers) to independently measure the effective performance parameters as previously

discussed, to refine measurement protocols as necessary, and to normalize amplifier and other equipment appropriately for a side-by-side comparison test between the device under test and a LTI system of similar size. Although not explicitly captured in the metrics, cost and weight are of secondary consideration.

A summary of the metric targets by phase is shown in Table 1. Metric targets provided in Table 1 are preliminary and subject to change over the course of the program.

Table 1: EQUAL-P Program Metrics and Related Targets by Phase

Metric	Metric Target		
	Phase I	Phase II	Phase III
$\beta_{\text{eff}}\eta_{\text{eff}}$ (non-LTI ESA)	Provision of compelling experimental, analytical, or modeling evidence that approach will result in a working prototype capable of achieving 10 dB improvement in the effective bandwidth-efficiency product of an otherwise equivalent ESA.	Delivery of a functional prototype capable of achieving 6 dB improvement in the effective bandwidth-efficiency product of an equivalent ESA.	Delivery of a functional prototype capable of achieving 10 dB improvement in the effective bandwidth-efficiency product of an equivalent ESA.
η_{eff} (non-LTI ESA)	Initial projection of η_{eff} for the proposed technique.	Improvement toward final prototype goal.	$\eta_{\text{eff}} > 50\%$ for final prototype (unless $ka \ll 1$ at IARPA's discretion).
ka_{eff} (non-LTI ESA)	Evaluation of the effective volume of the non-LTI system. Projection of achievable miniaturization for future prototypes with $ka_{\text{eff}} < 1/2$.	Improvement toward final prototype goal.	$ka_{\text{eff}} < 1/2$ for final prototype.
$\beta\eta$ (Comparable LTI ESA)	Validation via measurement of the performance of the proposed, comparable ESA approaching its fundamental geometrical limit.	Improvement of validation, if necessary, as determined by IARPA.	Improvement of validation, if necessary, as determined by IARPA.

1.G. Program Waypoints, Milestones, and Deliverables

Waypoints are the means by which the Performer clearly demonstrates the quantitative and timely progress that must be made for the overall concept to meet end-of-phase milestones. In other words, the intent of waypoints is to provide a clear measure of progress towards meeting the program milestones so the PM and advisors can provide more effective guidance and assistance to the Performers. Performance against these waypoints will be reviewed throughout the program, and the PM and non-government advisors will use performance against the waypoints to assess whether course corrections are needed to ensure program success.

1.G.1. Required Program Waypoints

The Government has identified the waypoints listed below for all Performers.

Waypoint 1: Preliminary Research Review (PRR). A PRR will occur during the first site visit (to be held virtually if Covid19 restrictions preclude in-person visits), expected within the first four (4) months of contract award. The PRR must include a detailed presentation of the preliminary research, an updated program schedule, and a mitigation plan for identified risks. At the PRR, Performer progress against proposed

approaches, plans, and research results will be presented by the Performer team and assessed by the Government with input from the T&E team and selected advisors. The PM will document recommendations and concerns with what was presented by the Performer at the PRR or within three (3) business days thereafter. The exit criteria for the Critical Research Review (CRR) will be discussed at the PRR. The PM may also refine the exit criteria for the CRR as part of the PRR documentation following the PRR.

Waypoint 2: Critical Research Review (CRR). A CRR will occur during a site visit to the Performer site within nine (9) months of the contract award. At the CRR, Performer progress, revised plans, and workflows will be presented by the Performer and assessed by the Government PM, with input from the T&E team and selected advisors. The Performer will provide evidence that all CRR exit criteria have been met and that the Performer is on track to meet end-of-phase goals. The PM will document any concerns and recommendations in what was presented by the Performer at the CRR or within three (3) business days thereafter. As a required deliverable for the CRR, Performers must provide evidence that, by the end of Phase I, they will be able to project Phase III performance (the goal being a working prototype capable of achieving 10 dB improvement in the effective bandwidth-efficiency product of an otherwise equivalent ESA). Performers should expect IARPA to elaborate on the specific requirements for CRR and the CRR exit criteria at the time of the PRR or before.

Offerors are encouraged to propose additional waypoints to quantify how their individual systems support the broader goals of the program. Well-constructed Offeror-defined waypoints provide task-driven intermediate steps towards meeting program technical metrics based on the Offeror's approach. Quantitative waypoints, reflected in the work plan and depicted on the schedule, help indicate progress toward milestones and reduce program risk by providing evidence that the technical and programmatic risks associated with the proposed approach are being addressed. A schedule of waypoint reviews must be included in proposals and shall include a rationale, a definition, metrics, and an evaluation plan for each waypoint. Waypoint reviews may coincide with site visits, reviews at Government locations, and design reviews.

Government-defined program waypoints, milestones, and metrics may be refined during the various phases of EQuAL-P; changes will be communicated to Performers as quickly as possible.

1.G.2. Program Milestone Timeline and Deliverables

Table 2 shows a timeline for the program with Government-defined waypoints, milestones, and deliverables.

Table 2: Program Waypoint, Milestone, and Deliverables Timeline

Event	Deliverables	Months after Kick-off			Comments
		Phase I	Phase II	Phase III	
Program Kick-off	Performers attend kick-off workshop.	0-2	optional	optional	Informs Performers of other potentially relevant technical approaches.
PM Visits Performer Sites	Report on Action Items resolution from previous site visits and Action Item Closure Plans.	required: 4, 9, 15 PM option: 6, 12, 18	required: 21 & 27 PM option: 24 & 30	required: 33 & 39 PM option: 36 & 42	Present program progress and results of internal testing.
Preliminary Research Review (PRR)	Must include: Preliminary research documentation and updated program schedule. Mitigation plan for identified risks. Validation via measurement of the performance of proposed, comparable LTI ESA in relation to its fundamental geometrical limit.	4, coincides with first PM Visit			Present preliminary experimental, analytical, or modeling evidence that approach will result in a working prototype capable of achieving 10 dB improvement in the effective bandwidth-efficiency product of an otherwise equivalent ESA. PM to refine Exit Criteria for CDR.
Critical Research Review (CRR)	Must include: Updated research documentation, program schedule, and mitigation plan for identified risks. Results of internal tests. Proof exit criteria have been met.	9, coincides with PM Visit			The PM will identify potential deficiencies at the CDR or within three (3) business days thereafter and evaluate proof that Exit Criteria have been met.
PI Workshop	Presentations, Action Items, and Action Item Closure Plans.	11-12	25-27	38-40	Performers report on progress.
Test & Evaluation	T&E teams present evaluation results to the PM.	15-17	30-32	42-44	T&E teams evaluate Performer approaches (Phase I) and/or measure Performer delivered hardware (Phases I-III).
End of Phase	Final Report as approved by PM.	18	33	45	All deliverables due.

In addition to scheduled deliverables shown in Table 2, the Government anticipates receiving the following as deliverables throughout the program (note that this list is not inclusive and is provided here as guidance for the Offerors). The award instrument type may alter this list.

- Any technical papers covering work funded by EQuAL-P;

- Monthly technical status reports detailing progress made, tasks accomplished, major risks, planned activities, trip summaries, changes to key personnel, and any potential issues or problem areas that require the attention of EQuAL-P Program Management shall be due within 10 days after the end of each month;
- Monthly financial status reports shall be due no later than 10 calendar days after the close of the invoice/billing cycle period covered by the report;
- A final report for each program phase that concisely describes and summarizes the work conducted, technical achievements, and remaining technical challenges, shall be due one calendar month after the end of each phase; and
- A final summary report shall be due at the end of the overall period of performance.

1.H. Meeting and Travel Requirements

Offerors are expected to assume responsibility for administration of their projects and to comply with contractual and program requirements for reporting, attendance at program workshops, and availability for site visits. In-person events will be held as allowed by evolving Covid19 restrictions. The following paragraphs describe typical expectations for meetings and travel for IARPA programs as well as the contemplated frequency and locations of such meetings. In addition to ensuring that all necessary details of developed designs, approaches, and prototypes are on track, each Performer will be required to be available for questions from each T&E team in weekly and/or bi-weekly status meetings.

1.H.1. Workshops

The EQuAL-P program intends to hold a program kick-off workshop in the first month of the program and then similar workshops annually thereafter. The dates and locations of these meetings are to be specified at a later date, but for planning purposes, Offerors should use the approximate times and locations listed in Table 2. These workshops will typically be of a two-day duration, will be held in the Washington, D.C. metropolitan area, and will focus on technical aspects of the program and on facilitating open technical exchanges, interaction, and sharing among the various program participants. Program participants will be expected to present the technical status and progress of their projects to other participants and invited guests. Individual sessions for each Performer with the Government Team will also be scheduled to coincide with these workshops.

1.H.2. Site Visits

Site visits by the Government Team including T&E performers and selected non-government advisors will generally take place up to four times yearly during the life of the program. These visits will occur at the Performer's facility. In addition to traditional means of conveying information such as reports and briefs on technical progress, details of successes and issues, and contributions to the program goals, Performers will be required to provide live, and interactive technology demonstrations, as appropriate.

1.H.3. Technical Status Meetings

The PM will be in frequent communication, in person or by teleconference, with Performers including both Prime and Subcontractors. Offerors should plan for a minimum of bi-weekly teleconference calls of one hour in duration. The frequency of these calls may change at the discretion of the IARPA PM.

1.I. Place of Performance

Performance will be conducted at the Performers' sites, with the exception of the tests at the end of each phase, which will occur at IARPA established testing sites.

1.J. Period of Performance

The EQuAL-P program is envisioned as a 45-month effort that is intended to begin July 2022. Phase I – Base Period of the program will last 18 months; Phase II – Option Period 1 will last 15 months; and Phase III – Option Period 2 will last 12 months.

2. AWARD INFORMATION:

The BAA shall result in awards for all Phases of the program. Exercise of the Option Periods shall depend upon performance during Phase I - Base Period and subsequent Option Periods, as well as program goals, the availability of funding, and IARPA priorities. Exercising of Phases II – Option Period 1 and Phase III-Option Period II is at the sole discretion of the Government.

Multiple awards are anticipated. The amount of resources made available under this BAA shall depend on the quality of the proposals received and the availability of funds. Multiple awards to the same Offeror is acceptable provided the proposed techniques are distinct and the proposed personnel are sufficiently different to achieve the necessary level of effort to complete the work.

The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this solicitation and to make awards without negotiations with Offerors. The Government also reserves the right to conduct negotiations if determined to be necessary. Additionally, the Government reserves the right to accept proposals in their entirety or to select only portions of proposals for negotiations for award. Evaluation and award of proposals will follow FAR 35 processes as described herein.

Awards under this BAA shall be made to Offerors on the basis of the Evaluation Factors listed in Section 5 of the BAA, as well as, successful completion of negotiations. Proposals selected for negotiation may only result in a procurement contract.

The Government shall contact Offerors whose proposals are selected for negotiations to obtain additional information required for award. The Government may establish a deadline for the close of fact-finding and negotiations that allows a reasonable time for the award of a contract. Offerors that are not responsive to Government deadlines established and communicated with the request may be removed from award consideration. Offerors may also be removed from award consideration should the parties fail to reach agreement within a reasonable time on contract terms, conditions, and cost/price.

3. ELIGIBILITY INFORMATION:

3.A. Eligible Applicants

All responsible sources capable of satisfying the Government's needs may submit a proposal. Historically Black Colleges and Universities, Small Businesses, Small Disadvantaged Businesses and Minority Institutions are encouraged to submit proposals and team with others to submit proposals; however, no portion of this announcement shall be set aside for these organizations' participation due to the impracticality of reserving discrete or severable areas for exclusive competition among these entities. Other Government Agencies, Federally Funded Research and Development Centers, University Affiliated Research Centers, Government-Owned, Contractor-Operated facilities, Government Military Academies, and any other similar type of organization⁸ that has a special relationship with the Government, that gives them access to privileged and/or proprietary information or access to Government equipment or real property, are not eligible to submit proposals under this BAA or participate as team members under proposals

⁸ There are instances when these types of entities provide a unique facility, specialized equipment or technical service that is not otherwise obtainable. In such cases, Offerors can request use and the Government will determine if the resource can be made available to all Offerors as Government Furnished Property / Equipment/Information / Service. If the resource requested cannot be provided directly by the Government, the Government may consider an Offeror's request for limited use as a procured service not otherwise available only after an OCI review and determination. It is advised that the Offeror have an alternate plan in its proposal in case the Government does not accept the proposed participation. Requests for such resources can be submitted during the Q&A period.

submitted by eligible entities. An entity of which only a portion has been designated as a UARC may be eligible to submit a proposal or participate as a team member subject to an organizational conflict of interest review.

Foreign entities and/or individuals may propose, even as the prime contractor. However, all foreign participation must comply with any necessary Non-Disclosure Agreements, Security Regulations, Export Control Laws, and other governing statutes applicable under the circumstances. Offerors are expected to ensure that participants do not either directly or indirectly compromise the laws of the United States, nor its security interests. As such, both foreign and domestic Offerors should carefully consider the roles and responsibilities of foreign participants as they pursue teaming arrangements.

3.A.1 Organizational Conflicts of Interest (OCI)

According to FAR 2.101 “Organizational Conflict of Interest” means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the Government, or the person’s objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage.

In accordance with FAR 9.5, Offerors are required to identify and disclose all facts relevant to potential OCIs involving the Offeror’s organization and any proposed team member (subawardee, consultant). Under this Section, the Offeror is responsible for providing this disclosure with each proposal submitted pursuant to the BAA. The disclosure must include the Offeror’s, and as applicable, proposed team member’s OCI mitigation plan. The OCI mitigation plan must include a description of the actions the Offeror has taken, or intends to take, to prevent the existence of conflicting roles that might bias the Offeror’s judgment and to prevent the Offeror from having an unfair competitive advantage. The OCI mitigation plan will specifically discuss the disclosed OCI in the context of each of the OCI limitations outlined in FAR 9.505-1 through FAR 9.505-4.

IARPA generally prohibits contractors/performers from concurrently providing Scientific Engineering Technical Assistance (SETA), Advisory and Assistance Services (A&AS) or similar support services and being a technical performer. Therefore, as part of the FAR 9.5 disclosure requirement above, address whether an Offeror or an Offeror’s team member (e.g., subawardee, consultant) is providing SETA, A&AS, or similar support (e.g., T&E services) to IARPA under: (a) a current award or subaward; or (b) a past award or subaward.

If SETA, A&AS, or similar support is or was being provided to IARPA, the proposal must include:

- The name of the IARPA program or office receiving the support;
- The prime contract number;
- Identification of proposed team member (subawardee, consultant) providing the support.

As part of their proposal, Offerors shall include either (a) a copy of their OCI notification including mitigation plan or (b) a written certification that neither they nor their subcontractor teammates have any potential conflicts of interest, real or perceived. A sample certification is provided in Appendix A.

The Government will evaluate OCIs and potential OCIs to determine whether they can be avoided, neutralized or mitigated and/or whether it is in the Government’s interest to grant a waiver. The Government will make OCI determinations, as applicable, for proposals that are otherwise selectable under the BAA Evaluation Factors.

The Government may require Offerors to provide additional information to assist the Government in evaluating OCIs and OCI mitigation plans. If a prospective Offeror believes that any conflict of interest exists or may exist (whether organizational or otherwise), the Offeror should promptly raise the issue with the Government by sending his/her contact information and a summary of the potential conflict by e-mail to the Contract Specialist identified herein, before time and effort are expended in preparing a proposal and mitigation plan.

If the Government determines that an Offeror failed to fully disclose an OCI; or failed to provide the affirmation of IARPA support as described above; or failed to reasonably provide additional information requested by Government

to assist in evaluating the Offeror's OCI and proposed OCI mitigation plan, the Government may reject the proposal and withdraw it from consideration for award.

3.A.2 Multiple Submissions to the BAA

Organizations may participate as a prime or subcontractor in more than one submission to the BAA. However, if multiple submissions to the BAA which include a common team member are selected, such common team members shall not receive duplicative funding (i.e., no one entity can be paid twice to perform the same task). Furthermore, to be eligible to receive multiple awards, proposed techniques for each award shall be distinct and the proposed personnel sufficiently different to achieve the necessary level of effort to complete the work.

3.B. U.S. Academic Institutions

According to Executive Order 12333, as amended, paragraph 2.7, "Elements of the Intelligence Community are authorized to enter into contracts or arrangements for the provision of goods or services with private companies or institutions in the United States and need not reveal the sponsorship of such contracts or arrangements for authorized intelligence purposes. Contracts or arrangements with academic institutions may be undertaken only with the consent of appropriate officials of the institution."

Offerors must submit a completed and signed Academic Institution Acknowledgement Letter for each U.S. academic institution that is a part of their team, whether the academic institution is serving in the role of a prime, or a subcontractor or a consultant at any tier of their team with their technical proposal. Each Letter must be signed by a senior official from the institution (e.g. President, Chancellor, Provost, or other appropriately designated official). A template of the Academic Institution Acknowledgement Letter is enclosed in APPENDIX A of this BAA. Note that the Government shall not enter into negotiations with an Offeror whose team includes a U.S. academic institution until all required Academic Institution Acknowledgment Letters are received.

3.C. Other Eligibility Criteria

3.C.1 Collaboration Efforts

Collaborative efforts and teaming arrangements among potential Offerors are strongly encouraged. Specific content, communications, networking and team formations are the sole responsibility of the participants.

4. APPLICATION AND SUBMISSION INFORMATION:

This notice constitutes the total BAA and contains all information required to submit a proposal. No additional forms, kits, or other materials are required.

4.A. Proposal Information

Interested Offerors are required to submit full proposals (Volume I, initially and Volume 2, if requested) in order to receive consideration for award. Compliant proposals shall be received by the time and date specified in the BAA. Selection for award remains contingent on the technical and funding availability evaluation factors. Proposals received after the BAA Closing Date are deemed to be late and will not be evaluated.

The Government intends to use Booz Allen Hamilton, AirIn Technologies Inc., Bluemont Technology & Research, Crimson Government Solutions, Everwatch, FedData, Patriot Solutions Group, Inc., Quantitative Scientific Solutions (QS-2), SAIC, and The Infusement Group, LLC regarding portions of the proposals submitted to the Government and/or to provide logistical support in carrying out the evaluation process.

In addition to supporting evaluations, the following entities: the Naval Information Warfare Center (NIWC), the Air Force Research Laboratory (AFRL), the Naval Air Warfare Center Weapons Division (NAWCWD), Georgia Tech Research Institute (GTRI), and Liles Innovations, LLC may be supporting T&E activities or consulting for contracts awarded under this program and should also be considered as part of an Offeror's OCI disclosure.

All Government and Contractor personnel shall have signed and be subject to the terms and conditions of non-disclosure agreements. By submission of its proposal, an Offeror agrees that its proposal information may be disclosed to employees of these organizations for the limited purposes stated above. Offerors who object to this arrangement shall provide clear notice of their objection as part of their transmittal letter. If Offerors do not send notice of objection to this arrangement in their transmittal letter, the Government shall assume consent to the use of contractor support personnel in assisting the review of submittal(s) under this BAA.

Only Government personnel will make evaluation and award determinations under this BAA.

All administrative correspondence and questions regarding this solicitation shall be directed by email to e-Commerce Central at <https://e-commerce.sscno.nmci.navy.mil>. Proposals shall be submitted in accordance with the procedures stated in the BAA.

4.B. Proposal Format and Content

To facilitate the evaluation of the proposal, the government encourages the Offerors to submit proposals which: are clear and concise; limited to essential matters sufficient to demonstrate a complete understanding of the Government's requirements; include sufficient detail for effective evaluation; and provide convincing rationale to address how the Offeror intends to meet these requirements and objectives, rather than simply rephrasing or restating the Government's requirements and objectives.

All proposals shall be in the format given below. Non-compliant proposals may be rejected without review. Proposals shall consist of "Volume 1 - Technical and Management Proposal" and, only if requested (see BAA sections 4.B.2 and 5.B.), "Volume 2 - Cost Proposal." All proposals shall be written in English.

Additionally, text should be black and paper size 8-1/2 by 11-inch, white in color with 1" margins from paper edge to text or graphic on all sides. The Government desires Times New Roman font with font size not smaller than 12 point. The Government desires that the font size for figures, tables and charts not be smaller than 10 point. All contents shall be clearly legible with the unaided eye. Excessive use of small font, for other than figures, tables, and charts, or unnecessary use of figures, tables, and charts to present information may render the proposal non-compliant. Text and graphics, if applicable, may be printed on both sides of a sheet (double-sided). Front and backside of a single sheet are counted as two (2) pages if both sides are printed upon. Foldout pages are not permitted. The page limitation for full proposals includes all figures, tables, and charts. All pages should be numbered. No other materials may be incorporated in any portion of the proposal by reference, as a means to circumvent page count limitations. All information pertaining to a volume shall be contained within that volume. Any information beyond the page limitations will not be considered in the evaluation of Offerors.

The Government anticipates proposals submitted under this BAA will be UNCLASSIFIED.

Each proposal submitted in response to this BAA shall consist of the following:

Volume 1 – Technical & Management Proposal (See Section 4.B.1 below)

Section 1 - Cover Sheet (see Appendix A) & Transmittal Letter (not included in page count)

Section 2 – Summary of Proposal

Section 3 – Detailed Proposal

Section 4 – Attachments (Not included in page count, but number appropriately for elements included. Templates are in the Appendices of this BAA)

- 1 – Academic Institution Acknowledgment Letter, if required
- 2 – Intellectual Property (IP) Rights, estimated not to exceed 4 pages
- 3 – Organizational conflict of Interest (OCI) Notification or Certification
- 4 – Bibliography

- 5 – Relevant Papers (up to three)
- 6 – Consultant Letters of Commitment
- 7 – Human Use Documentation (see Section 6) - **Not applicable**
- 8 – Animal Use Documentation (see Section 6) - **Not applicable**
- 9 – A Three Chart Summary of the Proposal
- 10 – Security Plan, estimated not to exceed 5 pages - **Not applicable**
- 11 – Research Data Management Plan (RDMP), estimated not to exceed 3 pages (see Section 4 and Template under Appendix A)

Volume 2 – Cost Proposal
(To be submitted only upon request of the Contracting Officer, See BAA Sections 4.B.2 and 5.B)

Section 1 – Cover Sheet (see Appendix B)

Section 2 – Estimated Cost Breakdown

Section 3 – Supporting Information

4.B.1 Volume 1: Technical and Management Proposal

Volume 1, Technical and Management Proposal, may include an attached bibliography of relevant technical papers or research notes (published and unpublished) which document the technical ideas and approach on which the proposal is based. Copies of not more than three relevant papers can be included with the submission. Other supporting materials will not be reviewed. Except for the cover sheet, transmittal letter, table of contents (optional), and the required attachments stated in the BAA the allowable page limits are as follows:

- **Not to exceed 20 pages if only one TC (beyond TC-1) is proposed**
- **Not to exceed 40 pages if two or more TCs (beyond TC-1) are proposed**

Any pages exceeding these limits will not be considered during the evaluation process. Proposals shall be accompanied by an official transmittal letter, using contractor format.

4.B.1.a Section 1: Cover Sheet & Transmittal Letter

A. Cover sheet: (See Appendix A for template)

B. Transmittal Letter

The transmittal letter shall include the following **(not to exceed one page)**:

Introduction of Offeror and team (subcontractors and consultants), the BAA number, IARPA program name, Offerors' Program name, the proposal validity period, the type contract vehicle being requested (procurement contract or other transaction) with a short rationale, any non-negotiable conditions on which the offer is based such as contract type (cost type, FFP), IP restrictions, etc., and the Offeror's points of contact information including: name, email and phone number for both technical and administrative issues.

Note: Any information required elsewhere in the proposal must be included in the appropriate section of the proposal (i.e., including the information in the transmittal letter alone may not be sufficient). If there is a conflict between the transmittal letter and the proposal the proposal shall control.

4. B.1.b Section 2: Summary of Proposal (see below for page limit)

Section 2 shall provide an overview of the proposed work as well as introduce associated technical and management issues. This section shall contain a technical description of technical approach to the research as well as a succinct portrayal of the uniqueness and benefits of the proposed work. It shall make the technical objectives clear and quantifiable and shall provide a project schedule with definite decision points and endpoints.

- **Not to exceed 5 pages**

The Summary shall include the elements specified in the sections below:

- A. A technical overview of the proposed research and plan. This section is the centerpiece of the proposal and shall succinctly describe the proposed approach and research. The overview shall clearly articulate the approach and design, technical rationale, and constructive plan for accomplishment of technical objectives and deliverable production. The approach will be supported by basic, clear calculations. Additionally, proposals shall clearly explain the innovative claims and technical approaches that will be employed to meet or exceed each program metric along with an explanation outlining why the proposed approaches are feasible. Proposals must also clearly identify any technical uncertainties and potential mitigations. The use of non-standard terms and acronyms should be avoided. This section shall be supplemented with a more detailed plan in Volume 1, Section 3 of the proposal.
- B. Summary of the products, transferable technology and deliverables associated with the proposed research results. Define measurable deliverables that show progress toward achieving the stated program milestones. All proprietary claims to the results, prototypes, IP, or systems supporting and/or necessary for the use of the research, results, and/or prototype shall be detailed in Attachment 2. Should no proprietary claims be identified in Attachment 2, Government rights shall be unlimited to all technology and deliverables resulting from or delivered under this BAA.
- C. Schedule and milestones for the proposed research. Summarize, in table form the schedule and milestones for the proposed research. Do not include proprietary information with the milestone chart.
- D. Related research. Include a general discussion of other research in this area, comparing the significance and plausibility of the proposed innovations against competitive approaches to achieve Program objectives.
Project contributors. Include a clearly defined organizational chart of all anticipated project participants and affiliations (e.g., subcontractor, consultant), organized under functional roles for the effort, along with the associated task number responsibilities for each individual.
- E. Technical Resource Summary: (NOTE: The full Cost Volume is not required unless requested by the Contracting Officer; therefore, it is critical that Offerors address the items below in their technical proposal so the Government can evaluate Resource Realism.)
 - Summarize the total level of effort by labor category/technical discipline (e.g., research scientist/chemist/physicist/engineer/administrative) and affiliation (e.g., prime/ subcontractor/consultant). All Key Personnel and significant contributors shall be identified by name. Provide a brief description of the qualifications for each labor category/technical discipline (e.g., education, certifications, years of experience).
 - Summarize level of effort by labor category/technical discipline for each major task.
 - Identify software and IP required for performance, by affiliation. List each item separately, identifying the task number for which the software or IP is required and the Performer team requiring it.
 - Identify materials or equipment (such as IT) required for performance. List each item separately, identifying the task number for which the material or equipment is required and the Performer team requiring it.

- Identify any other resources required to perform (e.g., services, data sets, data set repository, facilities, Government furnished property. List each item separately, identifying the task number for these other resources are required and the Performer team requiring it.
- Estimated travel, including purpose of travel and number of personnel per trip, by affiliation. (See Appendix B.4 for sample template)

The above information shall cross reference to the tasks set forth in the Offeror's statement of work and shall be supported by the detailed cost and pricing information provided in the Offeror's Volume 2 Cost Proposal, the latter of which shall be submitted only if requested.

4.B.1.c. Section 3: Detailed Proposal Information

This section of the proposal shall provide the detailed, in-depth discussion of the proposed research as well as supporting information about the Offeror's capabilities and resources. Specific attention shall be given to addressing both the risks and payoffs of the proposed research and why the proposed research will achieve the goals, objectives, metrics, and milestones in this BAA. The Government reserves the right to reject a proposal if the information requested below is not adequately addressed. This part shall provide:

- A. Statement of Work (SOW) - Clearly define the technical tasks and sub-tasks to be performed, their durations and the dependencies among them. For each task and sub-task, provide:
- A general description of the objective;
 - A detailed description of the approach to be taken, developed in an orderly progression and in enough detail to establish the feasibility of accomplishing the goals of the task;
 - Identification of the primary organization responsible for task execution (prime, sub-contractor, team member, etc.) by name;
 - The exit criteria for each task/activity (i.e., a product, event or milestone that defines its completion); and
 - Definition of all deliverables (e.g., data rights, reports, software) to be provided to the Government.

Note: Do not include any proprietary information in the SOW

At the end of this section of the proposal, provide a Gantt chart, showing all the tasks and sub-tasks on the left (grouped by technical challenge) with the performance period (in years/quarters) on the right. All milestones shall be clearly labeled on the chart. If necessary, use multiple pages to ensure legibility of all information.

- B. A detailed description of the objectives, scientific relevance, technical approach and expected significance of the work. Clearly identify the key elements of the proposed work and how they relate to each other. Describe the technical methods or approaches that will be used to meet or exceed each program milestone along with an explanation outlining why the proposed methods/approaches are feasible. Additionally, describe any anticipated risks along with possible mitigations. Proposals containing only a general discussion of the problem without detailed description of approaches, plausibility of implementation, and critical metrics may be deemed not selectable.
- C. State-of-the-art. Compare with the proposed approach to other on-going research, highlighting the uniqueness of the proposed approach and differences between the proposed effort and the current state-of-the-art. Identify advantages and disadvantages of the proposed work with respect to potential alternative approaches.
- D. Data sources. Identify and describe data sources to be utilized in pursuit of the stated research goals.

Offerors proposing to use existing data sets shall provide written verification that said data sets were obtained in accordance with U.S. laws and, where applicable, use will be in compliance with End User License

Agreements, Copyright Laws, Terms of Service, and laws and policies regarding privacy protection of U.S. Persons. Offerors proposing to obtain new data sets shall ensure that their plan for obtaining the data complies with U.S. Laws and, where applicable, with End User License Agreement, Copyright Laws, Terms of Service, and laws and policies regarding privacy protection of U.S. Persons. Offerors shall also address IP restrictions on the use or transfer of such data sets, in Attachment 2 of the Offeror’s proposal, as described in Section 4.B.1.d.

Offerors shall also include the documentation required in 6.B. (Human Use).

Documentation must be well written and logical; claims for exemptions from Federal regulations for human subject protection must be accompanied by a strong defense of the claims. The Human Use documentation and the written verification are not included in the total page count.

- E. Deliverables. Based on the required deliverables identified in Section 1 of the BAA, clearly identify the hardware and data to be delivered, including technical data and computer software. In Attachment 2 to Offeror’s proposal, Offerors shall address IP rights in such data, as described in Section 4.B.1.d.
- F. Cost, schedule, milestones. Describe the cost, schedule, and milestones for the proposed research, including cost estimates by cost element for base period, the option period(s) and the total program summary, and company cost share, if any, as well as, costs by technical area(s) and tasks (see tables below for sample format). The milestones shall not include proprietary information (Offeror can use their own format for milestones).

(Note: The full Volume 2 - Cost Proposal is not required unless requested by the CO; therefore, it is critical that Offerors address this element in their technical proposal so the Government can evaluate funding availability. See BAA Sections 4.B.2, 5.A., and 5.B).

SAMPLE FORMAT

Cost Element (burdened)	Phase 1- Base (18 Months)	Phase 2 -Option 1 (15 Months)	Phase 3 – Option 2 (12 Months)	Total Program Summary
Labor				
Subcontracts/Consultant				
Materials & Equipment				
Travel				
Other Direct Costs				
(Cost Share, if any)				
Total				

- G. Offeror’s previous accomplishments. Discuss previous accomplishments and work in this or closely related research areas and how these will contribute to and influence the current work.
- H. Facilities. Describe the facilities that shall be used for the proposed effort, including computational and experimental resources.
- I. Detailed Management Plan. Provide the Management Plan that clearly identifies both organizations and individuals within organizations that make up the team, and delineate the expected duties, relevant capabilities, and task responsibilities of team members and expected relationships among team members. Identify the expected levels of effort (percentage time, or fraction of an FTE) for all Key Personnel and significant contributors. Additionally, include a description of the technical, administrative, and business structure of the team along with an internal communications plan. Describe project/function/sub-contractor relationships (including formal teaming agreements), Government research interfaces, and planning,

scheduling, and control practices utilized, as well as the team leadership structure. Provide a brief biography of all Key Personnel (including alternates, if desired) and significant contributors who shall be involved in the research along with the amount of effort to be expended by each person during the year. Participation by all Key Personnel and significant contributors is expected to exceed 25% of their time. A compelling explanation is required for any variation from this figure.

If the team intends to use consultants, they shall also be included in the organizational chart with an indication of whether the person shall be an “individual” or “organizational” consultant (i.e., representing themselves or their organization), and organizational affiliation.

See Table 4 below for the recommended format.

Table 4: Team Organization (Example) * if applicable

Participants	Org	Role	Unique, Relevant Capabilities	Role: Tasks	Clearance Level *	Time
Jane Wake	LMN Univ.	PI/Key Personnel	Electrical Engineering	Program Mgr & Electronics: 10		100%
John Weck, Jr.	OPQ Univ.	Key Personnel	Mathematical Physics	Programming: 1-5		50%
Dan Wind	RST Univ.	Key Personnel	Physics	Design, Fab, and Integration: 6-8		90%
Katie Wool	UVW Univ.	Contributor	Quantum Physics	Enhancement witness design: 4		25%
Rachel Wade	XYZ Corp.	Co-PI/Key Personnel	Graph theory	Architecture design: 6		55%
Chris West	XYZ Corp.	Significant Contributor	EE & Signal Processing	Implementation & Testing: 8-9		60%
Julie Will	JW Cons.	Consultant (Individual)	Computer science	Interface design: 10		200 hours
David Word	A Corp.	Consultant (A. Corp.)	Operations Research	Applications Programming: 2-3		200 hours

- J. Resource Share. Include the type of support, if any, the Offeror might request from the Government, such as facilities, equipment, materials, or any such resources the Offeror is willing to provide at no additional cost to the Government to support the research effort. Cost sharing is not required from Offerors and is not an evaluation criterion but is encouraged where there is a reasonable probability of a potential commercial application related to the proposed research and development effort.
- K. The names of other federal, state or local agencies or other parties receiving the proposal and/or funding the proposed effort. If none, so state. Concurrent submission of the proposal to other organizations will not prejudice its review but may impact IARPA’s decision to fund the effort. See 5.A.2.a.
- L. Research Data Management Plan. (RDMP). Submit a RDMP that outlines how they will manage and preserve the Research Data, as defined below, collected or produced through the course of performance. The RDMP need not require the preservation of all Research Data: Offerors shall consider the cost and benefits of managing and preserving the Research Data in determining whether to preserve it. At a minimum, all Research Data associated with a peer-reviewed manuscript or final published article (hereinafter “Publications”) must be made publicly accessible by the award recipient before, on or at a reasonable time after the publication date. The Publications whose associated data must be covered by the RDMP are deliverables as described in Section 1.

Research Data is defined herein as the digital recorded factual material commonly accepted in the scientific community as necessary to validate research findings including data sets used to support scholarly publications, but does not include laboratory notebooks, preliminary analyses, drafts of scientific papers,

plans for future research, peer review reports, communications with colleagues, or physical objects, such as laboratory specimens.

The RDMP must address the following:

- Describe the types of Research Data collected or produced in the course of the project. Include standards to be used for Research Data and metadata content and format.
- A plan for making the Research Data that underlie Publications digitally accessible to the public before or, at the time of publication or conference presentation, or within a reasonable time after publication. The requirement could be met by including the data as supplementary information to the Publication or by depositing the Research Data in a searchable, machine-readable and digitally accessible form suitable for repositories available to the public free of charge. Such repositories could be discipline-specific repositories, general purpose research data repositories or institutional repositories. The published article or conference paper should indicate how the public may access Research Data underlying the paper's results and findings. Offerors should attempt to make the Research Data available for at least three years after published article or conference. (NOTE: Offerors shall make a best effort in identifying research data sets that may be used for Publications that occur after contract end. The Offeror shall deliver these data sets to the Government and make them available in repositories available to the public prior to the end of the period of performance, if not included as supplementary information to Publications.)
- Policies and provisions for sharing and preservation, including a) policies and provisions for appropriate protection of privacy, confidentiality, security, and IP, b) descriptions of tools, including software, needed to access and interpret the Research Data, and c) policies and provisions for re-use, re-distribution, and production of derivatives.
- If, for legitimate reasons (e.g., privacy, confidentiality, security, IP rights considerations; size of data sets, cost; time), the Research Data underlying the results of peer-reviewed publications or conference papers cannot be shared and preserved, the plan must include a justification citing such reasons.

In addressing these elements (e.g., types of data to be shared and preserved, standards to be used for data and metadata, repositories to be used for archiving data, timeframes for sharing and preservation), the RDMP should reflect the best practices of the relevant scientific discipline and research community. At a minimum, Research Data underlying Publications and associated metadata shall include an acknowledgement of IARPA support and a link to the associated Publication.

4.B.1.d. Section 4: Attachments

[NOTE: The attachments listed below shall be included with the proposal, if applicable, but do not count against the Volume 1-page limit.]

Attachment 1: Signed Academic Institution Acknowledgement Letter(s) (if applicable). A template is provided in Appendix A.

Attachment 2: IP Rights. A template is provided in Appendix A. This attachment is estimated not to exceed 4 pages and shall address the following:

Representation as to Rights. An Offeror shall provide a good faith representation that they either own or have sufficient licensing rights to all IP that will be utilized under their proposal.

Program-Specific IP Approach. IARPA requires sufficient rights to IP developed or used in the conduct of the proposed research to ensure that IARPA can successfully (a) manage the program and evaluate the technical output and deliverables, (b) communicate program information across Government organizations, and (c) support transition to and further use and development of the program results by Intelligence community (IC) users and others. IARPA anticipates that achieving these goals for the EQUAL-P program may necessitate a minimum of Unlimited Rights in all deliverables. However, there may be any number of other approaches to

intellectual property rights to achieve IARPA's program goals. "Unlimited rights" means the rights of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so. In addressing their approach to IP rights, Offerors should (1) describe the intended use of patented invention(s) or data, including, technical data and computer software, in the conduct of the proposed research; (2) describe the rights being offered to the Government along with a justification if less than Unlimited Rights is being offered; (3) explain how IARPA will be able to reach its program goals (including transition) with the rights offered to the Government; (4) identify the cost to the Government to acquire additional or alternative rights beyond those being offered, if applicable; and (5) provide possible alternatives in any area in which the offered rights may be insufficient for IARPA to achieve its program goals (e.g., the possibility of future licensing of privately-developed software to U.S. Government agencies at a reasonable cost.)

Patented Inventions. Offerors shall include documentation using the format provided in Appendix A, proving ownership of or sufficient rights to all inventions (or inventions for which a patent application has been filed) that will be utilized under the proposal for the IARPA program. If a patent application has been filed for an invention that the proposal utilizes, but the application has not yet been made publicly available and contains proprietary information, the Offeror may provide only the serial number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and a summary of the patent title, together with either: (1) a representation that the Offeror owns the invention, or (2) proof of sufficient licensing rights in the invention. Offerors shall also indicate their intention to incorporate patented technology into any deliverable- i.e., if Offerors intend for any deliverable to embody any invention covered by any patent or patent application the Offerors listed in Volume 1, Attachment 2, Offerors should also specify in the Attachment the deliverable into which the Offerors expects to incorporate the invention. In doing so, the Government requests that Offerors further specify any rights offered to the Government for inventions that shall be utilized in the program (beyond the implied license that accompanies a patent owner's sale of a patented product).

Noncommercial Data. Offerors shall identify all noncommercial data, including technical data and computer software, that it plans to generate, develop and/or deliver under any proposed award instrument in which the Government shall acquire less than unlimited rights. In doing so, Offerors must assert (a) the specific restrictions the Government's rights in those deliverables, (b) the basis for such restrictions, (c) the intended use of the technical data and noncommercial computer software in the conduct of the proposed research and development of applicable deliverables, and (d) a supporting rationale of why the proposed approach to data rights is in the Government's best interest (please see program specific goals above). **If no restrictions are intended, then the Offeror shall state "NONE."**

Commercial Data. Offerors shall identify all commercial data, including technical data and commercial computer software, that may be included in any deliverables contemplated under the research effort and assert any applicable restrictions on the Government's use of such commercial data (please see program specific goals above). **If no restrictions are intended, then the Proposer shall state "NONE."**

Data Developed with Mixed Funding. If mixed funding is anticipated in data generated, developed, and/or delivered under the research effort, the Government seeks at minimum "Government Purpose Rights" (GPR) for all noncommercial data deliverables; offering anything less shall be considered a weakness in the proposal. United States Government purposes include any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data or computer software for commercial purposes or authorize others to do so. Government Purpose Rights continue for a five-year period upon execution of the contract, and upon expiration of the five-year period, the Government obtains Unlimited Rights in the data.

Open Source. If Offerors propose the use of any open-source data or freeware, any conditions, restrictions or other requirements imposed by that software shall also be addressed. Offerors should leverage the format in **Appendix A** for their response.

Identification of Relevant Government Contracts. For all technical data and computer software that an Offeror intends to deliver with other than unlimited rights that are identical or substantially similar to technical data and computer software that the Offeror has produced for, delivered to, or is obligated to deliver to the Government under any contract or subcontract, the Offeror shall identify (a) the contract number under which the data, software, or documentation was produced; (b) the contract number under which, and the name and address of the organization to whom, the data and software was most recently delivered or shall be delivered; and (c) any limitations on the Government's rights to use or disclose the data and software, including, when applicable, identification of the earliest date the limitations expire.

Definitions. For this solicitation, the Government recognizes only the definitions of IP rights in accordance with the terms as set forth in the Federal Acquisition Regulation (FAR) part 27, Defense Federal Acquisition Regulation Supplement (DFARS) part 227, or as defined herein. If Offerors propose IP rights that are not defined in FAR part 27, DFARS part 227, or herein, Offerors shall clearly define such rights in the "Intellectual Property Rights" Attachment of their proposal. Offerors are reminded of the requirement for prime contractors to acquire sufficient rights from subcontractors to accomplish the program goals.

Evaluation. The Government may use the asserted data rights during the evaluation process to evaluate the impact of any identified restrictions. The technical content of the "Intellectual Property Rights" Attachment shall include only the information necessary to address the proposed approach to IP; any other technical discussion in the attachment shall not be considered during the evaluation process.

Attachment 3: OCI Notification or Certification Template provided in Appendix A.

Attachment 4: Bibliography. A brief bibliography of relevant technical papers and research notes (published and unpublished) which document the technical ideas on which the proposal is based.

Attachment 5: Relevant Papers. Copies of not more than three relevant papers may be included in the submission. The Offerors shall include a one-page technical summary of each paper provided, suitable for individuals who are not experts in the field.

Attachment 6: Consultant Commitment Letters. If needed.

Attachment 7: Human Use Documentation, reference section 6.B. **Not applicable**

Attachment 8: Animal Use Documentation. **Not applicable**

Attachment 9: A Three Chart Summary of the Proposal. A PowerPoint summary that quickly and succinctly indicates the concept overview, key innovations, expected impact, and other unique aspects of the proposal. The format for the summary slides is included in Appendix A to this BAA and does not count against the page limit. Slide 1 should be a self-contained, intuitive description of the technical approach and performance. These slides may be used during the evaluation process to present a summary of the proposal from the Offeror's view.

Attachment 10: Security Plan. (Not to exceed 5 pages). **Not applicable**

Attachment 11: RDMP (estimated as 2 to 3 pages). Template provided in Appendix A.

4.B.2. Volume 2: Cost Proposal (No Page Limit)

NOTE: This Volume is only required if the Offeror's proposal has been selected for negotiation (see BAA Section 5.B and 5.C). The notification of selection for negotiation will be issued in writing by the Contracting Officer and will include a request to submit the full Cost Volume within 10 business days or as otherwise authorized by the Contracting Officer.

The Government anticipates awarding cost-type procurement contracts however, Offerors requesting other than a cost-type procurement contract (i.e., Firm Fixed Price (FFP) contract) may be directed by the Contracting Officer to provide

“other than certified cost or pricing data” (reference FAR Part 15.4) and/or cost supporting information in a different format than described below. The Contracting Officer will determine whether to grant the request for other than a cost-type procurement contract. Examples of requests that would be considered for approval include those from non-traditional contractors such as commercial entities that do not accept FAR- based cost contracts, small businesses, start-up companies, consortia that may include universities and non-profits or foreign companies; where cost-sharing or government participation in the work is appropriate; where flexibility not available under a procurement contract is needed; or where commercialization by industry is deemed advantageous to the Government.

Regardless of the type of instrument determined to be appropriate by the Contracting Officer, the Offeror’s cost proposal shall contain sufficient factual information to establish the Offeror’s understanding of the project, the perception of project risks, the ability to organize and perform the work and to support the realism and reasonableness of the proposed cost, to the extent appropriate. The Government recognizes that undue emphasis on cost may motivate Offerors to offer low-risk ideas with minimum uncertainty and to staff the effort with junior personnel in order to be in a more competitive posture. The Government discourages such cost strategies. Cost reduction approaches that shall be received favorably include innovative management concepts that maximize direct funding for technology and limit diversion of funds into overhead.

4.B.2.a Section 1: Cover Sheet.

See Appendix B for the Cover Sheet Template

4.B.2.b. Section 2: Estimated Cost Breakdown.

Offerors shall submit numerical cost and pricing data using Microsoft Excel. The Excel document, in the format provided in Appendix B, shall include intact formulas and shall not be hard numbered. The base and option period cost data should roll up into a total cost summary. The Excel files may be write-protected but shall not be password protected. The Cost/Price Volume shall include the following:

- A. Completed Cost/Price Template - Offerors shall submit a cost element breakdown for the base period, each option period and the total program summary in the format provided in Appendix B.
- B. Total cost broken down by major task.
- C. Major program tasks by fiscal year.
- D. A summary of projected funding requirements by month.
- E. A summary table listing all labor categories used in the proposal and their associated direct labor rates, along with escalation factors used for each base year and option year.
- F. A summary table listing all indirect rates used in the proposal for each base year and option year.

4.B.2.c. Section 3: Supporting Information

In addition to the above, supporting cost and pricing information shall be provided in sufficient detail to substantiate the Offeror’s cost estimates. Include a description of the basis of estimate (BOE) in a narrative for each cost element and provide supporting documentation, as applicable:

Direct Labor – Provide a complete cost breakout by labor category, hours and rates (template available in Appendix B). Specify all Key Personnel by name and clearly state their labor category and proposed rate. Describe the basis of the proposed rates and provide a copy of the most recent Forward Pricing Rate Agreement (FPRA) with the Government. If Offerors do not have a current FPRA with the Government, provide payroll records or contingency hire letters with salary data to support each proposed labor category, including those for key individuals, and the most recent Forward Pricing Rate Proposal Submission, if applicable. Offeror should also address whether any portion of their labor rates is attributable to uncompensated overtime.

Labor Escalation Factor – State the proposed escalation rate and the basis for that rate (e.g., based upon Global Insight indices, Cost Index or historical data). If the escalation rate is based upon historical data, provide data to demonstrate the labor escalation trend. Provide a sample calculation demonstrating application of the factor to direct labor.

Subcontracts (to include consultants and Inter-organizational Transfers (IOTs) – The Offeror is responsible for compiling and providing full subcontractor proposals with the Cost Volume. Subcontractor cost element sheets shall be completed for the base period, each option period and the total summary using the same format required for the prime contractor (See Appendix B). Consultant letter(s) of commitment shall also be attached.

Information shall be presented in Excel with intact formulas using the format provided in Appendix B and addressing the supporting cost information as outlined in Section 4 of the BAA. In addition to the full and complete subcontractor cost proposals, the Offeror shall also provide its analysis of each subcontractor's proposal including justification for why the subcontractor was selected and its determination that the cost/price is fair and reasonable (Reference FAR Part 44 and FAR clause 52.244-2). **If subcontractors have concerns about proprietary cost information, subcontractors may submit their detailed cost proposals directly to the CO.**

Materials and Equipment – Provide copies of quotes, bill of materials, historical data or any other information including Offeror's analysis to support proposed costs.

Travel - The proposed travel supporting detail shall include destination and purpose of the trip, number of trips, number of travelers and days per trip and price per traveler in sufficient detail to verify the BOE. Proposed travel costs shall comply with the limitations set forth in FAR Part 31. (See Appendix B.4 for sample format).

Proposed conference travel must have an immediate, direct, and tangible benefit to the Government such as providing a deliverable at the conference (e.g., gives a presentation, presents a paper or research findings that are sponsored in whole or in part by IARPA). Travel for personnel to simply attend a conference will not be approved as a direct charge to the contract.

Other Direct Costs (ODCs) – ODCs shall be listed separately and supported by quotes, historical data or any other information including the Offeror's analysis.

Indirect Costs – The Offeror shall show indirect cost calculations, identify the proposed indirect rate by contractor fiscal year and program period (base, option period) and provide information on indirect cost pools and allocation bases for each year and program period involved. If a Government agency recently audited the Offeror's indirect rates, the Offeror shall identify the agency that conducted the audit, when the rates were approved and the period for which they are effective. Include a copy of this rate agreement. Absent current Government rate recommendations, it is incumbent on the Offeror to provide some other means of demonstrating indirect rate realism (e.g., 3 years of historical actual costs with applicable pools and bases). If proposed rates vary significantly from historical experience, the Offeror shall explain the variance.

Cost sharing – Describe the source, nature and amount of cost-sharing, if any. Reference Resource Share from Section 4 of the BAA.

Other Pricing Assumptions – Identify all pricing assumptions that should be incorporated into the resulting award instrument (e.g., use of Government Furnished Property/Facilities/Information, access to Government Subject Matter Experts, etc.). Reference Resource Share from Section 4 of the BAA.

Facilities Capital Cost of Money (FCCM) – If proposing FCCM, the Offeror shall show FCCM cost calculations, identify the proposed FCCM factors by contractor fiscal year and program year and provide a copy of the Forward Price Rate Agreement (FPRA), Forward Price Rate System (FPRS) or Forward Pricing Rate Recommendation (FPRR), if available.

Profit/Fee - Identify the proposed profit or fee percentage and the proposed profit/fee base. Provide justification for your proposed profit or fee.

Systems - For the systems listed below, provide a brief description of the cognizant federal agency and audit results. If the system has been determined inadequate, provide a short narrative describing the steps your organization has taken to address the inadequacies and the current status. If a formal audit has been performed by a Government Agency, please provide a complete copy of the audit report or adequacy determination letter. If the system has never received a formal Government review and approval include a statement to that effect. Address whether your organization has contracts that are Cost Accounting Standards (CAS) covered and if so, whether they are subject to full or modified CAS coverage.

- Accounting system
- Purchasing system

Certified “cost or pricing data” may be requested for procurement contract awards that exceed the threshold for submittal as set forth in the FAR, unless the Contracting Officer approves an exception from the requirement to submit cost or pricing data. (Reference FAR Part 15.403.)

4.C. Submission Details

4.C.1. Due Dates

See BAA General Information Section for proposal due dates and times.

4.C.2 Proposal Delivery

Proposals (Volume 1 **initially**) shall be submitted electronically through the NAVWAR e-Commerce Central at <https://e-commerce.sscno.nmci.navy.mil>. Offerors interested in providing a submission in response to this BAA shall first register by electronic means in accordance with the instructions provided on the e-Commerce website. Offerors who plan to submit proposals for evaluation are strongly encouraged to register at least one week prior to the due date for the first round of proposals. Offerors who do not register in advance do so at their own risk, and the Government shall not extend the due date to accommodate such Offerors. Failure to register as stated shall prevent the Proposer’s submittal of documents.

Offerors should upload a proposal, (initially Volume 1 **only**), scanned certifications and permitted additional information in ‘pdf’ format, or as otherwise directed (Excel, PowerPoint, etc.). Offerors are responsible for ensuring a compliant and timely submission of their proposals to meet the BAA submittal deadlines. Time management to upload and submit is wholly the responsibility of the Offeror. **Note: DO NOT upload your Volume 2 – Cost Proposal. Directions for submittal of Volume 2 – Cost Proposal will be provided by the Contracting Officer when Offerors are notified of selection for negotiations.**

The Government strongly suggests that the Offeror document the submission of their proposal package by printing the electronic receipt (time and date stamped) that appears on the final screen following compliant submission of a proposal.

Volume 1 submitted by any means other than e-Commerce Central (e.g., hand-carried, postal service, commercial carrier and email) shall not be considered unless the Offeror attempted electronic submittal but was unsuccessful. Should an Offeror be unable to complete the electronic submittal, the Offeror shall employ the following procedure: The Offeror shall send a message via e-Commerce Central at <https://e-commerce.sscno.nmci.navy.mil> prior to the proposal due date and time specified in the BAA and indicate that an attempt was made to submit electronically and that the submittal was unsuccessful. This e-mail shall include contact information for the Offeror. Upon receipt of such notification, the Government will provide additional guidance regarding submission.

Volume 1 shall be submitted by the date and time specified in the BAA, General Information section, in order to be considered in the initial round. It is in the Government’s sole discretion whether to evaluate proposals received after this date. Selection remains contingent on the technical and funding availability evaluation factors. Proposals received after the BAA Closing Date are deemed to be late and will not be reviewed. Failure to comply with the submission procedures may result in the submittal not being evaluated.

Classified proposals are not anticipated for this program. In no case shall classified information be uploaded into e-Commerce Central.

4.D. Funding Restrictions

Facility construction costs are not allowable under this activity. Funding may not be used to pay for commercialization of technology.

5. PROPOSAL REVIEW INFORMATION

5.A. Technical and Funding Availability Evaluation Factors

The factors used to evaluate and select proposals for negotiation for this Program BAA are described in the following paragraphs. Because there is no common SOW, each proposal shall be evaluated on its own merits and its relevance to the Program goals rather than against other proposals submitted in response to this BAA. The proposals shall be evaluated on the basis of technical and funding availability factors. These are of equal importance. Within the technical evaluation factor, the specific technical criteria are in descending order of importance, as follows: Overall Scientific and Technical Merit, Effectiveness of Proposed Work Plan, Contribution and Relevance to the IARPA Mission and Program Goal, Relevant Experience and Expertise, and Resource Realism. Specifics about the evaluation criteria are provided below.

Award(s) shall be made to an Offeror on the basis of the technical and funding availability factors listed below, and subject to successful negotiations with the Government. Award shall not be made to Offeror(s) whose proposal(s) are determined not to be selectable. Offerors are cautioned that failure to follow submittal instructions may negatively impact their proposal evaluation or may result in rejection of the proposal for non-compliance.

5.A.1. Technical Evaluation Factor (technical criteria listed below)

5.A.1.a. Overall Scientific and Technical Merit

Overall scientific and technical merit of the proposal is substantiated, including unique and innovative methods, approaches, and/or concepts. The Offeror clearly articulates an understanding of the problem to be solved. The technical approach is credible and includes a clear assessment of primary risks and a means to address them. The proposed research advances the state-of-the-art.

5.A.1.b. Effectiveness of Proposed Work Plan

The feasibility and likelihood that the proposed approach will satisfy the Program's milestones and metrics are explicitly described and clearly substantiated along with risk mitigation strategies for achieving stated milestones and metrics. The proposal reflects a mature and quantitative understanding of the program milestones and metrics, and the statistical confidence with which they may be measured. Any Offeror proposed milestones and metrics are clear and well-defined, with a logical connection to enabling Offeror decisions and/or Government decisions. The schedule to achieve the milestones is realistic and reasonable.

The roles and relationships of prime and sub-contractors are clearly delineated with all participants fully documented. Work plans shall demonstrate the ability to provide full Government visibility into and interaction with key technical activities and personnel, and a single point of responsibility for contract performance. Work plans shall also demonstrate that all Key Personnel and significant contributors have sufficient time committed to the Program to accomplish their described Program roles.

The requirement and rationale for and the anticipated use or integration of Government resources, including but not limited to all equipment, facilities, information, etc., are fully described including dates when such Government Furnished Property (GFP), GFE, GFI or other similar Government-provided resources shall be required.

The Offeror's RDMP is complete, addressing the types of data to be collected or produced, describing how each type of data will be preserved and shared, including plans to provide public access to peer reviewed publications and the underlying Research Data, or provides justifiable rationale for not doing so.

5.A.1.c. Contribution and Relevance to the IARPA Mission and Program Goal

The proposed solution meets the letter and intent of the stated program goals and all elements within the proposal exhibit a comprehensive understanding of the problem. The Offeror clearly addresses how the proposed effort shall meet and progressively demonstrate the Program goals. The Offeror describes how the proposed solution contributes to IARPA's mission to invest in high-risk/high-payoff research that can provide the U.S. with an overwhelming intelligence advantage.

The Offeror's proposed IP and data rights are consistent with the Government's need to be able to effectively manage the program and evaluate the technical output and deliverables, communicate program information across Government organizations and support transition to and further use and development of the program results by IC users and others at a reasonable cost that is acceptable to the Government. The proposed approach to IP rights is in the Government's best interest.

5.A.1.d Relevant Experience and Expertise

The Offeror's capabilities, related experience, facilities, techniques, or unique combination of these, which are integral factors for achieving the proposal's objectives, shall be evaluated, as well as, qualifications, capabilities, and experience of all Key Personnel and significant contributors critical in achieving the program objectives.

5.A.1.e Resource Realism

The proposed resources demonstrate a clear understanding of the program, a perception of the risks and the Offeror's ability to organize and perform the work. The labor hours and mix are consistent with the technical approach and are realistic for the work proposed. Material, equipment, software, data collection and management, and travel, especially foreign travel, are well justified, reasonable, and required for successful execution of the proposed work.

5.A.2. Funding Availability Factor

5.A.2.a. Budget Constraints

The Government will seek to maximize the likelihood of meeting program objectives within program budget constraints. This may involve awarding one or more contracts. **Note:** If the Offeror has submitted the proposal to other federal, state or local agencies or other parties that may fund the proposed effort, it may impact the Government's decision to fund the effort.

5.A.2.b. Program Balance

The Government will consider IARPA's overall mission and program objectives, which may include but are not limited to the following: broadening the variety of technical approaches to enhance program outcomes, transitioning the technology to Government partners, developing capabilities aligned with the priorities of the IC and national security.

5.B. Method of Evaluation and Selection Process

The Government will conduct impartial, equitable, and comprehensive proposal reviews and select the source (or sources) whose offer meets the Government's technical, policy and programmatic goals. For evaluation purposes, a proposal is the document described in Section 4 of the BAA. Other supporting or background materials submitted with the proposal shall not be considered.

The contract award process for this BAA has two steps. The first step is selection for negotiations and is made on the basis of review of the technical and funding availability factors (See BAA Section 5.A.). The second step is negotiation and contract award. Contract award is contingent on Contracting Officer determination of a fair and reasonable cost/price and agreement on terms and conditions.

Selection for negotiation, will be conducted through a peer or scientific review process led by the PM. This process entails establishing a Scientific Review Panel (SRP) made up of qualified Government personnel who will review and assess each proposal's strengths, weaknesses and risks against the technical evaluation criteria. If necessary, non-Government technical experts with specialized expertise may advise Government panel members and the PM. However, only Government personnel will make selection determinations under this BAA.

Proposals will be reviewed individually and will not be reviewed against each other as they are not submitted in accordance with a common SOW. When SRP reviews are complete, the PM will prepare a recommendation to the IARPA Scientific Review Official (SRO) identifying proposals as selectable, selectable with modification, or not selectable based on consideration of all stated factors (technical and funding availability factors). The SRO will make the final decision as to selectability for negotiations. At this point, Offerors will be notified in writing as to whether they have been determined selectable, selectable with modification, or not selectable.

5.C. Negotiation and Contract Award

After selection and before award, the Government will contact Offerors whose proposals were selected or selected with modifications to engage in negotiations. At that time, the Government will also request a full cost proposal, as described in BAA Section 4.B.2. The Government will review the cost proposal using the proposal analysis techniques described in FAR 15.404-1, as appropriate, to determine a fair and reasonable cost. The Government's evaluation will include review of proposed anticipated costs/prices of the Proposer and those of associate, participating organizations, to ensure the Offeror has fully analyzed the budget requirements, provided sufficient supporting information, has adequate systems for managing the contract (accounting, purchasing), and that data is traceable and reconcilable. The Government will also determine whether the prospective contractor meets the responsibility standards of FAR Section 9.104. Additional information and supporting data may be requested.

If proposed costs submitted are substantially different than the estimates provided in the technical proposal, then a contract may not be awarded.

Procurement contracts, as determined by the contracting officer, shall be awarded to those Offerors whose proposals are deemed most advantageous to the Government, all stated evaluation factors considered, and pending the successful conclusion of negotiations.

5.D. Proposal Retention

Proposals shall not be returned upon completion of the source selection process. A copy of each proposal received shall be retained by the Government and all other non-required copies shall be destroyed. A certification of destruction may be requested, provided that the formal request is sent to the Government via e-Commerce Central at <https://e-commerce.ssno.nmci.navy.mil> within 5 days after notification of proposal results.

6. AWARD ADMINISTRATION INFORMATION

6.A. Award

6.A.1. Communications and Award Notices

All questions or discussions regarding this solicitation must be directed to the Contracting Officer and the Contract Specialist (See Section VII). All communication throughout this process must be handled formally and through the proper channels, which means all parties must ensure a Government Contract Specialist or Contracting Officer is present and/or engaged during any and all communication exchanges. Any informal communications or outside communication will delay and may also jeopardize a potential award.

As soon as practicable after the evaluation of a proposal is complete, the Offeror will be notified that: (1) its proposal has been selected for negotiations, or (2) its proposal has not been selected for negotiations.

6.A.2. Types of Awards

Procurement contracts will be made under this announcement. There are no limits on award amounts.

6.A.3. Offer Preparation Reimbursement

The Government provides no funding for direct reimbursement of proposal development costs.

6.A.4. Obligating of the Government

Prospective Offerors are advised that only Contracting Officers are legally authorized to commit the Government. Only Contracting Officers may obligate the Government to an agreement involving the expenditure of Government funds. Any resultant procurement contract award would include all clauses required by the FAR and appropriate supplements.

6.A.5. Security Guidance

Security classification guidance via a DD Form 254, "DoD Contract Security Classification Specification," will not be provided at this time since the Government is soliciting ideas only. After reviewing the incoming proposals, if a determination is made that the award instrument may result in access to classified information a DD Form 254 will be issued and attached as part of the award. Depending on the work to be performed, the Offeror may require a SECRET facility clearance and safeguarding capability; therefore, personnel identified for assignment to a classified effort must be cleared for access to SECRET information at the time of award. In addition, the Offeror may be required to have, or have access to, a certified and Government-approved facility to support work under this BAA.

6.A.6. Proposal Handling

The Government has contracted for various business and staff support services, some of which require contractors to obtain access to proprietary information submitted by Offerors. Any objection to access must be in writing to the Contracting Officer and shall include a detailed statement of the basis for the objection.

6.A.7. Offer Markings

All proposals containing proprietary data should have the cover page and each page containing proprietary data clearly marked as containing proprietary data. If only portions of the page contain proprietary information, those portions should be clearly marked. It is the Proposer's responsibility to clearly define to the Government what is considered proprietary data. No proposals containing classified information should be submitted under this announcement.

6.A.8. Small Business Innovation Research (SBIR)

Offerors may propose perform work that is a continuation of a previously awarded SBIR research project. However, Offerors shall not receive duplicative funding (i.e., no SBIR awardee may be paid twice to perform the same task).

6.B. Other Administrative Information

6.B.1. Export Control

Offerors are warned that compliance with International Traffic in Arms Regulations (ITAR) may be required and will be included in all procurement contracts. The ITAR, issued by the Dept. of State, controls the export of defense-related articles and services, including technical data, ensuring compliance with the Arms Export Control Act (22 U.S.C. 2751 et seq.) If a Proposer has questions regarding how to comply with the ITAR, they are directed to look at DFARS 252.225-7048(c).

Offerors are also warned that compliance with the Export Administration Regulations (EAR) may be required and will be included in all procurement contracts. The EAR, issued by the Dept. of Commerce, controls the export of dual-use items, (items that have both commercial and military or proliferation applications) and purely commercial items. These items include commodities, software, and technology. Refer to the Commerce Control List, which is part of the EAR, to identify items subject to EAR, at <http://www.gpoaccess.gov/cfr/index.html> and http://www.access.gpo.gov/bis/ear/ear_data.html.

The following clause, DFARS 252.225-7048 - Export-Controlled Items, will be included in awards as deemed appropriate:

(a) Definition. "Export-controlled items," as used in this clause, means items subject to the Export Administration Regulations (EAR) (15 CFR Parts 730-774) or the International Traffic in Arms Regulations (ITAR) (22 CFR Parts 120-130). The term includes:

(1) "Defense items," defined in the Arms Export Control Act, 22 U.S.C. 2778(j)(4)(A), as defense articles, defense services, and related technical data, and further defined in the ITAR, 22 CFR Part 120.

(2) "Items," defined in the EAR as "commodities", "software", and "technology," terms that are also defined in the EAR, 15 CFR 772.1.

(b) The Contractor shall comply with all applicable laws and regulations regarding export-controlled items, including, but not limited to, the requirement for contractors to register with the Department of State in accordance with the ITAR. The Contractor shall consult with the Department of State regarding any questions relating to compliance with the ITAR and shall consult with the Department of Commerce regarding any questions relating to compliance with the EAR.

(c) The Contractor's responsibility to comply with all applicable laws and regulations regarding export-controlled items exists independent of, and is not established or limited by, the information provided by this clause.

(d) Nothing in the terms of this contract adds, changes, supersedes, or waives any of the requirements of applicable Federal laws, Executive orders, and regulations, including but not limited to—

(1) The Export Administration Act of 1979, as amended (50 U.S.C. App. 2401, et seq.);

(2) The Arms Export Control Act (22 U.S.C. 2751, et seq.);

(3) The International Emergency Economic Powers Act (50 U.S.C. 1701, et seq.);

(4) The Export Administration Regulations (15 CFR Parts 730-774);

(5) The International Traffic in Arms Regulations (22 CFR Parts 120-130); and

(6) Executive Order 13222, as extended.

(e) The Contractor shall include the substance of this clause, including this paragraph (e), in all subcontracts.

6.B.2. Public Release

It is the policy of the Department of Defense that the publication of products of fundamental research will remain unrestricted to the maximum extent possible. Research to be performed as a result of this BAA may be Fundamental. The Government does not anticipate applying publication restrictions of any kind but reserves the right to require prior review before publication in appropriate or required circumstances.

Offerors should note that pre-publication approval of certain information may be required if it is determined that its release may result in the disclosure of sensitive intelligence information.

A courtesy soft copy of any work submitted for publication shall be provided to the IARPA PM and the Contracting Officer Representative (COR) a minimum of 5 business days prior to release in any forum.

6.B.3. Electronic Systems

6.B.3.a. System for Award Management (SAM)

In accordance with FAR 52.204-7 and DFARS 252.204-7004, an Offeror must be actively registered in the System for Award Management. Selected Offerors not already registered in SAM will be required to register prior to any award under this BAA. FAR 52.204-7 System for Award Management and FAR 52.204-13 System for Award Management Maintenance are incorporated into this BAA, and FAR 52.204-13 will be incorporated in all awards. Information on SAM registration is available at <https://www.sam.gov/portal/public/SAM/>

6.B.3.b. Representations and Certifications

In accordance with FAR 4.1201, prospective Proposers shall complete electronic annual representations and certifications at <https://www.sam.gov/portal/public/SAM/>

6.B.3.c. Invoicing, Receipt, Acceptance, and Property Transfer (iRAPT) (formerly Wide Area Work Flow (WAWF))

Unless using another approved electronic invoicing system, performers will be required to submit invoices for payment directly via the Internet/WAWF at <https://wawf.eb.mil>. Registration to iRAPT/WAWF will be required prior to any award under this BAA.

6.B.3.d. NAVWAR e-Commerce Central

Proposal submissions for contracts will only be accepted via NAVWAR e-Commerce Central at <https://e-commerce.sscno.nmci.navy.mil>. (Note that this does not include a "www" prefix) by selecting NIWC Pacific then Open BAAs from the left hand menu and selecting the Solicitation number.

6.B.4. Certificate of Current Cost and Pricing Data

Upon completion of negotiations and agreement on contract cost, a Certificate of Current Cost or Pricing Data may be required in accordance with FAR 15.406-2. In addition, any Offeror who is required to submit and certify cost or pricing data shall certify on behalf of subcontractors.

6.B.5. Government Resources

If an Offeror and the Government accepts an Offeror's proposal to use government resources in performance of an award (e.g. GFP, GFI, GFE, etc.), the resultant award will include additional contractual requirements. The specific requirements will be determined for the individual award.

6.B.6. Use of Arms, Ammunition and Explosives

Safety

The Offeror is required to be in compliance with DoD manual 4145.26-M, DoD Contractor's Safety Manual for Ammunition and Explosives if ammunitions and/or explosives are to be utilized under the proposed research effort. (See DFARS 223.370-5 and DFARS 252.223-7002)

If ammunitions and/or explosives (A&E) are to be utilized under the proposed research effort, the Government requires a preaward safety survey in accordance with DFARS PGI 223.370-4(C)(iv) entitled Preaward survey. The Offeror is solely responsible for contacting the cognizant Defense Contract Management Agency (DCMA) office and obtaining a required preaward safety survey before proposal submission. The Offeror should include required preaward safety surveys with proposal submissions.

If the Offeror proposes that the Government provide Government-furnished A&E containing any nitrocellulose-based propellants and/or nitrate ester-based materials (such as nitroglycerin) or other similar A&E with a tendency to become chemically unstable over time, then NMCARS 5252.223-9000 will also apply to a resulting contract award. (See NMCARS 5223.370-5)

Security

If arms, ammunition or explosives (AA&E) are to be utilized under the proposed research effort, the Government requires a preaward security survey. The Offeror is solely responsible for contacting the cognizant DCMA office and obtaining a required preaward security survey before proposal submission. The Offeror should include a required preaward security survey with proposal submission. (See DoD manual 5100.76-M, Physical Security of Sensitive Conventional Arms, Ammunition and Explosives, paragraph C1.3.1.4)

If AA&E are to be utilized under the proposed research effort, the Government may require the Contractor to have perimeter fencing around the place of performance in accordance with DoD 5100.76-M, Appendix 2.

If AA&E are to be utilized under the proposed research effort, the Offeror is required to provide a written copy of the Offeror's AA&E accountability procedures in accordance with DoD 5100.76-M. If the Offeror is required to provide written AA&E accountability procedures, the Offeror should provide the respective procedures with its proposal submission. See DoD 5100.76-M Appendix 2.12.

6.B.7. Employment Eligibility Verification (E-verify)

As per FAR 22.1802, recipients of FAR-based procurement contracts must enroll as Federal Contractors in E-verify and use E-verify to verify employment eligibility of all employees assigned to the award. All resultant contracts from this solicitation will include FAR 52.222-54, "Employment Eligibility Verification."

6.B.8. Reporting

Fiscal and management responsibility are important to the Program. Although the number and types of reports shall be specified in the award document, all Offerors shall, at a minimum, provide the Contracting Officer, COTR and PM with monthly technical reports and monthly financial reports. The reports shall be prepared and submitted in accordance with the procedures contained in the award document and mutually agreed upon before award. Technical reports shall describe technical highlights and accomplishments, priorities and plans, issues and concerns, evaluation results, and future plans. Financial reports shall present an on-going financial profile of the project, including total project funding, funds invoiced, funds received, funds expended during the preceding month, and planned expenditures over the remaining period. Additional reports and briefing material may also be required, as appropriate, to document progress in accomplishing program metrics.

The Offeror shall prepare and provide a research report of their work by month 18 for Phase 1, by month 15 for Phase 2, and month 12 for Phase 3. The reports shall be delivered to the CO, COTR and the PM. The reports shall include:

- Problem definition
- Findings and approach
- System design
- Possible generalization(s)
- Information on performance limitations and potential mitigation
- Anticipated path ahead
- Final identification of all commercial, third-party, or proprietary hardware, software, or technical data integrated into any deliverable and all applicable use restrictions.
- Any research products, including publications, data, and software, resulting from the project during the reporting period. The final report shall list in-progress scientific manuscripts and other research products.

6.B.9. Human Use

All research involving human subjects, to include use of human biological specimens and human data, selected for funding must comply with the federal regulations for human subject protection. Further, research involving human subjects that is conducted or supported by the DoD must comply with 32 CFR 219, Protection of Human Subjects (http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title32/32cfr219_main_02.tpl), and DoD Directive 3216.02, Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research (<http://www.dtic.mil/whs/directives/corres/pdf/321602p.pdf>).

Institutions awarded funding for research involving human subjects must provide documentation of a current institutional Assurance of Compliance with Federal regulations for human subject protection and a DoD addendum to the Assurance. A Federal Wide Assurance example can be found at Department of Health and Human Services, Office of Human Research Protection (<http://www.hhs.gov/ohrp>). A DoD addendum can be obtained from Army, Navy, or Air Force offices. Information on DoD addendums can be found at (<http://www.onr.navy.mil/en/About-ONR/compliance-protections/Research-Protections/Research-Protection-Addendum-Assurance.aspx>). All institutions engaged in human subject research, to include subcontractors, must also have a valid Assurance. In addition, personnel involved in human subject research must provide documentation of completing appropriate training for the protection of human subjects.

For all proposed research that will involve human subjects in the first year or phase of the project, the institution must provide evidence of or a plan for review by an Institutional Review Board (IRB) upon final proposal submission to NIWC Pacific. The IRB conducting the review must be the IRB identified on the institution's Assurance. The protocol, separate from the proposal, must include a detailed description of the research plan, study population, risks and benefits of study participation, recruitment and consent process, data collection, and data analysis. Consult the designated IRB for guidance on writing the protocol. The informed consent document must comply with federal regulations (32 CFR 219.116). A valid Assurance along with evidence of appropriate training of all investigators should accompany the protocol for review by the IRB.

In addition to a local IRB approval, a secondary review of concurrence review and approval is required for all research intending to use military and/or civilian subjects by a cognoscente DOD IRB. The Army, Navy, or Air Force office associated with subject recruitment can provide guidance and information about their component's IRB review process.

The amount of time required to complete the IRB review/approval process may vary depending on the complexity of the research and/or the level of risk to study participants. Ample time should be allotted to complete the approval process. The IRB approval process can last between one to three months, followed by a DoD review that could last between three to six months. No DoD funding can be placed on a contract/grant toward human subject tasking until ALL approvals are granted and documentation provided to NIWC Pacific for compliance verification and approval.

6.B.10. Animal Use

No research proposals involving animal subjects shall be accepted under this BAA. Use of non-human primates is not permitted under this BAA.

6.B.11. Recombinant DNA

Proposals which call for experiments using recombinant DNA must include documentation of compliance with Department of Health and Human Services (DHHS) recombinant DNA regulations, approval of the Institutional Biosafety Committee (IBC), and copies of the DHHS Approval of the IBC letter.

6.B.12. Institutional Dual Use Research of Concern

As of September 24, 2015, all institutions and USG funding agencies subject to the United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern must comply with all the requirements listed therein. If your research proposal directly involves certain biological agents or toxins, contact the cognizant Technical Point of Contact. U.S. Government Science, Safety, Security (S3) guidance may be found at <http://www.phe.gov/s3/dualuse>.

6.B.13. Electronic and Information Technology

All electronic and information technology acquired through the BAA must satisfy the accessibility requirements of Section 508 of the Rehabilitation Act (29 U.S.C. § 794d) and FAR Subpart 39.2. Each Proposer who submits a proposal involving the creation or inclusion of electronic and information technology must ensure that Federal employees with disabilities will have access to and use of information that is comparable to the access and use by Federal employees who are not individuals with disabilities. Additionally, each Proposer must ensure that members

of the public with disabilities seeking information or services from NIWC Pacific will have access to and use of information and data that is comparable to the access and use of information and data by members of the public who are not individuals with disabilities.

6.C. FAR / DFARS Provisions & Clauses

6.C.1. Provisions

For purposes of illustration and not limitation, the following provisions may be applicable to NIWC Pacific contracts:

FAR Clause No.	Title
52.204-8	Annual Representations and Certifications
52.204-16	Commercial and Government Entity Code Reporting
52.204-22	Alternative Line Item Proposal
52.204-24	Representation Regarding Certain Telecommunications and Video Surveillance Services or Equipment
52.209-7	Information Regarding Responsibility Matters
52.209-13	Violation of Arms Control Treaties or Agreements—Certification
52.215-16	Facilities Capital Cost of Money
52.215-22	Limitations on Pass-Through Charges—Identification of Subcontract Effort
52.216-1	Type of Contract
52.216-27	Single or Multiple Awards
52.217-4	Evaluation of Options Exercised at Time of Contract Award
52.217-5	Evaluation of Options
52.229-11	Tax on Certain Foreign Procurements—Notice and Representation.
52.230-1	Cost Accounting Standards Notices and Certification
52.230-7	Proposal Disclosure—Cost Accounting Practice Changes
52.233-2	Service of Protest
52.252-1	Solicitation Provisions Incorporated by Reference
52.252-5	Authorized Deviations in Provisions
DFARS Clause No.	Title
252.203-7005	Representation Relating to Compensation of Former DoD Officials
252.204-7007	Alternate A, Annual Representations and Certifications
252.204-7008	Compliance with Safeguarding Covered Defense Information Controls
252.204-7016	Covered Defense Telecommunications Equipment or Services--Representation
252.204-7017	Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services--Representation
252.204-7019	Notice of NIST SP 800-171 DoD Assessment Requirements.
252.215-7003	Requirement for Submission of Data Other Than Certified Cost or Pricing Data—Canadian Commercial Corporation
252.215-7007	Notice of Intent to Resolicit
252.215-7009	Proposal Adequacy Checklist
252.215-7010	Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data--Basic
252.215-7011	Requirements for Submission of Proposals to the Administrative Contracting Officer and Contract Auditor
252.215-7012	Requirements for Submission of Proposals via Electronic Media
252.215-7013	Supplies and Services Provided by Nontraditional Defense Contractors
252.225-7003	Report of Intended Performance Outside the United States and Canada—Submission with Offer
252.225-7032	Waiver of United Kingdom Levies—Evaluation of Offers
252.225-7973	Prohibition on the Procurement of Foreign-Made Unmanned Aircraft Systems—Representation. (DEVIATION 2020-O0015)
252.225-7974	Representation Regarding Persons that have Business Operations with the Maduro Regime (DEVIATION 2020-O0005)
252.227-7017	Identification and Assertion of Use, Release, or Disclosure Restrictions
252.227-7028	Technical Data or Computer Software Previously Delivered to the Government
252.239-7098	Prohibition on Contracting to Maintain or Establish a Computer Network Unless Such Network is Designed to Block Access to Certain Websites--Representation

FAR Clause No.	Title
252.247-7022	Representation of Extent of Transportation by Sea

6.C.2. Clauses

FAR and DFARS clauses apply to any contract awarded under this BAA. Specific clauses depend on a variety of factors (e.g., contract type, contract value, business size, etc.) and will be negotiated at award.

6.C.2.a. Combating Trafficking in Persons

Appropriate language from FAR Clause 52.222-50 will be incorporated in all awards.

6.C.2.b. Ensuring Adequate COVID-19 Safety Protocols for Federal Contractors

DFARS Clause 252.223-7999 Ensuring Adequate COVID-19 Safety Protocols for Federal Contractors (DEVIATION 2021-O0009) will be incorporated in all awards.

6.C.2.c. Certification Regarding Trafficking in Persons Compliance Plan

Prior to award of a contract, for the portion of the contract that is for supplies, other than commercially available off-the-shelf items, to be acquired outside the United States, or services to be performed outside the United States, and which has an estimated value that exceeds \$500,000, the contractor shall submit the certificate as specified in paragraph (c) of 52.222-56, Certification Regarding Trafficking in Persons Compliance Plan.

6.C.2.d. Updates of Information regarding Responsibility Matters

FAR clause 52.209-9, “Updates of Publicly Available Information Regarding Responsibility Matters”, will be included in all contracts valued at \$500,000 where the contractor has current active Federal contracts and grants with total value greater than \$10,000,000.

VII. AGENCY CONTACTS:

Questions of a technical and/or business nature shall be submitted to the Contracting Officer through the e-Commerce Central web site (<https://e-commerce.sscno.nmci.navy.mil>).

Questions must reference the title and number of the BAA

This notice constitutes a BAA as contemplated in FAR 35.016. No additional written information is available, nor will a formal request for proposal (RFP) or other solicitation regarding this announcement be issued. Interested parties are invited to respond to this announcement. All responsible parties' responses will be considered.

Appendix A: Templates for Volume 1: Technical Proposal

A.1 Cover Sheet for Volume 1: Technical Proposal

(1) BAA Number	N66001-22-S- 0031
(2) Technical Challenge(s) – (TC)(s), if applicable	
(3) Lead Organization Submitting Proposal	
(4) Type of Business, Selected Among the Following Categories: “Large Business”, “Small Disadvantaged Business”, “Other Small Business”, “HBCU”, “MI”, “Other Educational”, or “Other Nonprofit”	
(5) Contractor’s Reference Number (if any)	
(6) Other Team Members (if applicable) and Type of Business for Each	
(7) Proposal Title	
(8) Technical Point of Contact to Include: Title, First Name, Last Name, Street Address, City, State, Zip Code, Telephone, Fax (if available), Electronic Mail (if available)	
(9) Administrative Point of Contact to Include: Title, First Name, Last Name, Street Address, City, State, Zip Code, Telephone, Fax (if available), Electronic Mail (if available)	
(10) Volume 1 no more than the specified page limit	Yes/No
(11) Restrictions on Intellectual property rights details provided in Appendix A format?	Yes/No
(12) Research Data Management Plan included?	Yes/No
(13) OCI Waiver Determination, Notification or Certification [see Section 3 of the BAA] Included?	Yes/No
(13a) If No, is written certification included (Appendix A)?	Yes/No
(14) Are one or more U.S. Academic Institutions part of your team?	Yes/No
(14a) If Yes, are you including an Academic Institution Acknowledgment Statement with your proposal for each U.S. Academic Institution that is part of your team (Appendix A)?	Yes/No
(15) Total Funds Requested from IARPA and the Amount of Cost Share (if any)	\$
(16) Date of Proposal Submission	

Appendix A.2 Academic Institution Acknowledgment Letter

-- Please Place on Official Letterhead --

<Insert date>

To: Contracting Officer
NIWC Pacific

Office of the Director of National Intelligence Washington, D.C.
20511

Subject: Academic Institution Acknowledgment Letter Reference: Executive Order 12333, As Amended, Para 2.7

This letter is to acknowledge that the undersigned is the responsible official of <insert name of the academic institution>, authorized to approve the contractual relationship in support of the Office of the Director of National Intelligence's Intelligence Advanced Research Projects Activity and this academic institution.

The undersigned further acknowledges that he/she is aware of the Intelligence Advanced Research Projects Activity's proposed contractual relationship with <insert name of institution> through N66001-22-S-0031 and is hereby approved by the undersigned official, serving as the president, vice-president, chancellor, vice-chancellor, or provost of the institution.

<Name>

Date

<Position>

Appendix A.3 Intellectual Property Rights

[Please provide here your good faith representation of ownership or possession of appropriate licensing rights to all IP that shall be utilized under the Program.]

Patents

PATENTS				
Patent number (or application number)	Patent name	Inventor name(s)	Patent owner(s) or assignee	Incorporation into deliverable
(LIST)	(LIST)	(LIST)	(LIST)	(Yes/No; applicable deliverable)

- (1) Intended use of the patented invention(s) listed above in the conduct of the proposed research:
- (2) Description of license rights to make, use, offer to sell, or sell, if applicable, that are being offered to the Government in patented inventions listed above:
- (3) How the offered rights will permit the Government to reach its program goals (including transition) with the rights offered:
- (4) Cost to the Government to acquire additional or alternative rights, if applicable:
- (5) Alternatives, if any, that would permit IARPA to achieve program goals:

Data (Including Technical Data and Computer Software)

NONCOMMERCIAL ITEMS			
Technical Data, Computer Software To be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

COMMERCIAL ITEMS			
Technical Data, Computer Software To be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

- (1) Intended use of the data, including, technical data and computer software, listed above in the conduct of the proposed research:
- (2) Description of Asserted Rights Categories, specifying restrictions on Government’s ability to use, modify, reproduce, release, perform, display, or disclose technical data, computer software, and

deliverables incorporating technical data and computer software listed above:

- (3) How the offered rights will permit the Government to reach its program goals (including transition) with the rights offered:**
- (4) Cost to the Government to acquire additional or alternative rights, if applicable:**
- (5) Alternatives, if any, that would permit IARPA to achieve program goals:**

Appendix A.4 Organizational Conflicts of Interest Certification Letter

(Month DD, YYYY)

Office of the Director of National Intelligence
Intelligence Advanced Research Projects Activity (IARPA) EQUAL-P
Program
ATTN: Jacob Ward, NIWC Pacific, Contracting Officer

Subject: OCI Certification

Reference: <Insert Program Name>, N66001-22-S- 0031, (Insert assigned proposal ID#, if received)

Dear _____,

In accordance with Broad Agency Announcement N66001-22-S- 0031, Organizational Conflicts of Interest (OCI), and on behalf of (Offeror name) I certify that neither (Offeror name) nor any of our subcontractor teammates has as a potential conflict of interest, real or perceived, as it pertains to the EQUAL-P program. Please note the following subcontractors and their proposed roles:

[Please list all proposed contractors by name with a brief description of their proposed involvement.]

If you have any questions, or need any additional information, please contact (Insert name of contact) at (Insert phone number) or (Insert e-mail address).

Sincerely,

(Insert organization name) (Shall be signed by an official that has the authority to bind the organization)

(Insert signature)

(Insert name of signatory) (Insert title of signatory)

Appendix A.5 Three Chart Summary of the Proposal

Chart 1: Overview

- Self-contained, intuitive description of the technical approach and performance
 - Avoid acronyms! Especially those that are contractor specific.

Chart 2: Key Innovations

- Innovation 1
- Innovation 2
- Innovation 3

Graphics / Data

Chart 3: Expected Impact

- Deliverable 1; Performance and Impact
- Deliverable 2; Performance and Impact
- Unique aspects of the proposal

Appendix A.6 Research Data Management Plan (RDMP) N66001-22-S- 0031

The Offeror must address each of the elements noted below.

The RDMP shall comply with the requirements stated in Section 4 of the BAA. In doing so, it will support the objectives of the ODNI Public Access Plan at <https://www.iarpa.gov/index.php/working-with-iarpa/public-access-to-iarpa-research>

1. **Sponsoring IARPA Program** (required):
2. **Offeror** (i.e., lead organization responding to BAA) (required):
3. **Offeror point of contact** (required):
The point of contact is the proposed principal investigator (PI) or his/her Designee.
 - a. **Name and Position:**
 - b. **Organization:**
 - c. **Email:**
 - d. **Phone:**
4. **Research data types** (required):
Provide a brief, high-level description of the types of data to be collected or produced in the course of the project.
5. **Standards for research data and metadata content and format** (required):
Use standards reflecting the best practices of the relevant scientific discipline and research community whenever possible.
6. **Plans for making the research data that underlie the results in peer-reviewed journal articles and conference papers digitally accessible to the public** at the time of publication/conference or within a reasonable time thereafter (required):
The requirement could be met by including the data as supplementary information to a peer reviewed journal article or conference paper or by depositing the data in suitable repositories available to the public.
 - a. **Anticipated method(s) of making research data publicly accessible:**
___ Provide dataset(s) to publisher as supplementary information (if publishers allow public access)
___ Deposit dataset(s) in Data Repository
___ Other (specify) _____
 - b. **Proposed research data repository or repositories** (for dataset(s) not provided as supplementary information):
Suitable repositories could be discipline-specific repositories, general purpose research data repositories, or institutional repositories, as long as they are publicly accessible.
 - c. **Retention period, at least three years after publication of associated research results:**
State the minimum length of time the data will remain publicly accessible.
 - d. **Submittal of metadata to IARPA:**
Offerors are required to make datasets underlying the results published in peer-reviewed journal or conferences digitally accessible to the public to the extent feasible. Here, the Proposer should state a commitment to submit metadata on such datasets to IARPA in a timely manner. Note: This does not supersede any requirements for deliverable data, as the award document may include metadata as a deliverable item.
7. **Policies and provisions for sharing and preservation** (as applicable):
 - a. Policies and provisions for appropriate protection of privacy, confidentiality, security, and intellectual property:
 - b. Descriptions of tools, including software, which may be needed to access and interpret the data:
 - c. Policies and provisions for re-use, re-distribution, and production of derivative works:
8. **Justification for not sharing and/or preserving data underlying the results of peer-reviewed publications** (as applicable):
If, for legitimate reasons, the data cannot be shared and preserved, the plan must include a justification detailing such reasons. Potential reasons may include privacy, confidentiality, security, IP rights

considerations; size of data sets; cost of sharing and preservation; time required to prepare the dataset(s) for sharing and preservation.

Appendix B: Templates for Volume 2: Cost Proposal

Appendix B.1 Cover Sheet for Volume 2: Cost Proposal

(1) BAA Number	N66001-22-S- 0031
(2) Technical Challenge(s) (TC)(s)	
(3) Lead organization submitting proposal	
(4) Type of Business, Selected Among the Following Categories: “Large Business”, “Small Disadvantaged Business”, “Other Small Business”, “HBCU”, “MI”, “Other Educational”, or “Other Nonprofit”	
(5) Contractor’s Reference Number (if any)	
(6) Other Team Members (if applicable) and Type of Business for Each	
(7) Proposal Title	
(8) Technical Point of Contact to Include: Title, First Name, Last Name, Street Address, City, State, Zip Code, Telephone, Fax (if available), Electronic Mail (if available)	
(9) Administrative Point of Contact to Include: Title, First Name, Last Name, Street Address, City, State, Zip Code, Telephone, Fax (if available), Electronic Mail (if available)	
(10) Contract type/award Instrument Requested: specify	
(11) Place(s) and Period(s) of Performance	
(12) Total Proposed Cost Separated by Basic Award and Option(s) (if any)	
(13) Name, Address, Telephone Number of the Offeror’s Defense Contract Management Agency (DCMA) Administration Office or Equivalent Cognizant Contract Administration Entity, if Known	
(14) Name, Address, Telephone Number of the Offeror’s Defense Contract Audit Agency (DCAA) Audit Office or Equivalent Cognizant Contract Audit Entity, if Known	
(15) Date Proposal was Prepared	
(16) DUNS Number	
(17) TIN Number	
(18) CAGE Code	
(19) Proposal Validity Period [minimum of 180 days]	
(20) Cost Summaries Provided (Appendix B)	
(21) Size of Business in accordance with NAICS Code 541712	

Appendix B.2 Prime Contractor/Subcontractor Cost Element Sheet for Volume 2: Cost Proposal

Prime Contractor/Subcontractor Cost Element Sheet for Volume 2: Cost Proposal					
Complete a Cost Element Sheet for the Base Period and each Option Period					
COST ELEMENT		BASE	RATE	AMT	
DIRECT LABOR (List each labor category separately. Identify all Key Personnel by name.)		# of Hours	\$	\$	
TOTAL DIRECT LABOR				\$	
FRINGE BENEFITS		\$	%	\$	
TOTAL LABOR OVERHEAD		\$	%	\$	
SUBCONTRACTORS, IOTS, CONSULTANTS (List separately. See below table.)				\$	
MATERIALS & EQUIPMENT (List each material and equipment item separately.)		Quantity	\$ unit price	\$	
SOFTWARE & IP (List separately. See table below.)		\$	\$	\$	
TOTAL MATERIALS & EQUIPMENT				\$	
MATERIAL OVERHEAD		\$	%	\$	
TRAVEL (List each trip separately.)		# of travelers	\$ price per traveler	\$	
TOTAL TRAVEL				\$	
OTHER DIRECT COSTS (List each item separately.)		Quantity	\$ unit price	\$	
TOTAL ODCs				\$	
G&A		\$	%	\$	
SUBTOTAL COSTS				\$	
COST OF MONEY		\$	%	\$	
TOTAL COST				\$	
PROFIT/FEE		\$	%	\$	
TOTAL PRICE/COST				\$	
GOVERNMENT SHARE, IF APPLICABLE				\$	
RECIPIENT SHARE, IF APPLICABLE				\$	
SUBCONTRACTORS/IOTs) & CONSULTANTS PRICE SUMMARY					
A	B	C	D	E	F
SUB-CONTRACTOR IOT & CONSULTANT NAME	SOW TASKS PERFORMED*	TYPE OF AWARD	SUB-CONTRACTOR, IOT & CONSULTANT QUOTED PRICE	COST PROPOSED BY PRIME FOR SUBCONTRACTOR, IOT & CONSULTANT	DIFFERENCE (Column D - Column E) IF APPLICABLE
TOTALS					
*Identify Statement of Work, Milestone or Work Breakdown Structure paragraph, or provide a narrative explanation as an addendum to this Table that describes the effort to be performed.					

Appendix B.3 - Software and IP Costs

Software and IP Costs		
Item	Cost	Date of Expiration
(List)		

NOTE: Educational institutions and non-profit organizations as defined in FAR part 31.3 and 31.7, respectively, at the prime and subcontractor level may deviate from the cost template in Appendix B when estimating the direct labor portion of the proposal to allow for OMB guided accounting methods (2 CFR 220) that are used by their institutions. The methodology shall be clear and provide sufficient detail to substantiate proposed labor costs. For example, each labor category shall be listed separately; identify all Key Personnel and significant contributors provide hours/rates or salaries and percentage of time allocated to the project.

Appendix B.4 – Travel Costs Trip breakdown

		Trip Breakdown					
Base - Phase I:							
Trip #	Month of Trip	# of Travelers	Name of Traveler/Company	# of Days	Location	Purpose of Travel	Estimated Cost
Option Period - Phase II:							
Trip #	Month of Trip	# of Travelers	Name of Traveler/Company	# of Days	Location	Purpose of Travel	Estimated Cost
Option Period - Phase III:							
Trip #	Month of Trip	# of Travelers	Name of Traveler/Company	# of Days	Location	Purpose of Travel	Estimated Cost

Appendix B.5 – Contract Deliverables Table

Contract Deliverables				

SOW TASK#	Deliverable Title	Format	Due Date	Distribution/Copies
Continual	Monthly Contract Status Report	Gov't Format	10th of each month	Copy to PM, Contracting Officer and COTR
Continual	Monthly Technical Status Reports	Gov't Format	10th of each month	Standard Distribution**
<p>** Standard Distribution: 1 copy of the transmittal letter <u>without the deliverable to the Contracting Officer.</u> <u>1 copy of the transmittal letter with the deliverable to the Primary PM and COTR.</u></p>				